

Author Index

Aquaculture, volumes 148 / 2–158, 1997

- Aas, G.H., B. Bjerkeng, B. Hatlen and T. Storebakken
 Idoxanthin, a major carotenoid in the flesh of Arctic charr (*Salvelinus alpinus*) fed diets containing astaxanthin 150 (1997) 135
- Abad, M., *see* Jara-Jara, R. et al.
- Abad, M.E., *see* Rotllant, J. et al.
- Acosta, B., *see* Méndez, L. et al.
- Adams, A., *see* Bakopoulos, V. et al.
- Adlard, R.D., *see* Wesche, S.J. et al.
- Aidar, E., *see* Lourenço, S.O. et al.
- Ako, H., *see* Lim, C. et al.
- Aksnes, A. and H. Mundheim
 The impact of raw material freshness and processing temperature for fish meal on growth, feed efficiency and chemical composition of Atlantic halibut (*Hippoglossus hippoglossus*). 149 (1997) 87
- Aksnes, A., M.S. Izquierdo, L. Robaina, J.M. Vergara and D. Montero
 Influence of fish meal quality and feed pellet on growth, feed efficiency and muscle composition in gilthead seabream (*Sparus aurata*) 153 (1997) 251
- Al-ablani, S.A. and R.P. Phelps
 Sex reversal in black crappie *Pomoxis nigromaculatus*: effect of oral administration of 17 α -methyltestosterone on two age classes 158 (1997) 155
- Alapide-Tendencia, E.V. and L.A. Dureza
 Isolation of *Vibrio* spp. from *Penaeus monodon* (Fabricius) with red disease syndrome 154 (1997) 107
- Albentosa, M., A. Pérez-Camacho, U. Labarta and M.J. Fernández-Reiriz
 Evaluation of live microalgal diets for the seed culture of *Ruditapes decussatus* using physiological and biochemical parameters. 148 (1996) 11
- Albentosa, M., A. Pérez-Camacho, U. Labarta and M.J. Fernández-Reiriz
 Evaluation of freeze-dried microalgal diets for the seed culture of *Ruditapes decussatus* using physiological and biochemical parameters 154 (1997) 305
- Alcivar-Warren, A., *see* Wolfus, G.M. et al.
- Aldana-Aranda, D., V. Patiño-Suárez and T. Brulé
 Nutritional potentialities of *Chlamydomonas coccoides* and *Thalassiosira fluviatilis*, as measured by their ingestion and digestion rates by the Queen Conch larvae (*Strombus gigas*). 156 (1997) 9
- Alderman, D.J., *see* Rangdale, R.E. et al.
- Alexis, M.N., K.K. Karanikolas and R.H. Richards
 Pathological findings owing to the lack of ascorbic acid in cultured gilthead bream (*Sparus aurata* L.) 151 (1997) 209
- Ali, M.Z., *see* Mazid, M.A. et al.
- Alpasan, L.G., *see* Duray, M.N. et al.
- Alsted, N., *see* Bjerkeng, B. et al.

- Alvarez, M.C., *see* Bejar, J. et al.
- Alveal, K., H. Romo, C. Werlinger and E.C. Oliveira
Mass cultivation of the agar-producing alga *Gracilaria chilensis* (Rhodophyta) from spores 148 (1997) 77
- Amouroux, J.M., G. Cuzon and A. Grémare
Association of pulse chase design, compartmental analysis and analog modeling to assess absorption and assimilation efficiencies in *Penaeus stylirostris* fed an artificial diet 149 (1997) 71
- Anastasiadis, P., *see* Divanach, P. et al.
- Anderson, D.P., *see* Jeney, G. et al.
- Anderson, T.A., *see* Appleford, P. et al.
- Andreatta, E.R., *see* Vinatea, L. et al.
- Anfossi, P., *see* Malvisi, J. et al.
- Ang, K.J., *see* Habib, M.A.B. et al.
- Aoki, T., *see* Uno, K. et al.
- Appleford, P. and T.A. Anderson
Apparent digestibility of tuna oil for common carp, *Cyprinus carpio* – effect of inclusion level and adaptation time 148 (1997) 143
- Arai, K., *see* Umino, T. et al.
- Araya, R., *see* Riquelme, C. et al.
- Arnesen, P., *see* Nordrum, S. et al.
- Arumugam, P.T.
Suitability of a continuous-flow chamber for investigating fish larvae/fry growth responses 151 (1997) 365
- Åsgård, T., *see* Nordrum, S. et al.
- Aure, J., *see* Ervik, A. et al.
- Ausió, J., *see* Martínez-Lage, A. et al.
- Austin, C.M., P.L. Jones, F. Stagnitti and B.D. Mitchell
Response of the yabby, *Cherax destructor* Clark, to natural and artificial diets: phenotypic variation in juvenile growth 149 (1997) 39
- Austin, C.M., *see* De Silva, S.S. et al.
- Azis, A., *see* Shansudin, L. et al.
- Bacela, N., *see* Britz, P.J. et al.
- Badía, P., *see* Ibeas, C. et al.
- Bakopoulos, V., D. Volpatti, E. Papapanagiotou, R. Richards, M. Galleotti and A. Adams
Development of an ELISA to detect *Pasteurella piscicida* in culture and in 'spiked' fish tissue 156 (1997) 359
- Balompapueng, M.D., *see* Hagiwara, A. et al.
- Barbarino, E., *see* Lourenço, S.O. et al.
- Barbaro, A., A. Francescon, G. Bozzato, A. Merlin, P. Belvedere and L. Colombo
Induction of spawning in gilthead seabream, *Sparus aurata* L., by a long-acting GnRH agonist and its effects on egg quality and daily timing of spawning 154 (1997) 349
- Barki, A., T. Levi, A. Shrem and I. Karplus
Ration and spatial distribution of feed affect survival, growth, and competition in juvenile red-claw crayfish, *Cherax quadricarinatus*, reared in the laboratory 148 (1997) 169
- Barki, A., T. Levi, G. Hulata and I. Karplus
Annual cycle of spawning and molting in the red-claw crayfish, *Cherax quadricarinatus*, under laboratory conditions 157 (1997) 239
- Barki, A., *see* Sagi, A. et al.
- Barrows, F.T., *see* Lellis, W.A. et al.
- Battershill, C.N., *see* Duckworth, A.R. et al.
- Bautista, M.N. and P.F. Subosa
Changes in shrimp feed quality and effects on growth and survival of *Penaeus monodon* juveniles 151 (1997) 121

- Bautista, M.N., *see* Millamena, O.M. et al.
- Begum, N.N., *see* Mazid, M.A. et al.
- Bejar, J., J.J. Borrego and M.C. Alvarez
A continuous cell line from the cultured marine fish gilt-head seabream (*Sparus aurata* L.). 150 (1997) 143
- Bekina, E.N., *see* Podoskina, T.A. et al.
- Bell, J.D., *see* Foyle, T.P. et al.
- Bell, J.D., *see* Ramofafia, C. et al.
- Bell, J.G., B.M. Farndale, M.P. Bruce, J.M. Navas and M. Carillo
Effects of broodstock dietary lipid on fatty acid compositions of eggs from sea bass (*Dicentrarchus labrax*) 149 (1997) 107
- Bell, J.G., *see* Sargent, J.R. et al.
- Bell, T.A., *see* Mohny, L.L. et al.
- Belvedere, P., *see* Barbaro, A. et al.
- Benetti, D.D.
Spawning and larval husbandry of flounder (*Paralichthys woolmani*) and Pacific yellowtail (*Seriola mazatlanensis*), new candidate species for aquaculture 155 (1997) 307
- Bent Samuelsen, O., L. Pursell, P. Smith and A. Ervik
Multiple-dose pharmacokinetic study of Romet³⁰ in Atlantic salmon (*Salmo salar*) and in vitro antibacterial activity against *Aeromonas salmonicida* 152 (1997) 13
- Benzie, J.A.H.
A review of the effect of genetics and environment on the maturation and larval quality of the giant tiger prawn *Penaeus monodon* 155 (1997) 69
- Benzie, J.A.H., M. Kenway and L. Trott
Estimates for the heritability of size in juvenile *Penaeus monodon* prawns from half-sib matings 152 (1997) 49
- Berg, L.
Commercial feasibility of semi-intensive larviculture of atlantic halibut (*Hippoglossus hippoglossus* L.) 155 (1997) 333
- Berge, G.M., *see* Helland, S.J. et al.
- Bergot, P., *see* Coutteau, P. et al.
- Bergot, P., *see* Escaffre, A.M. et al.
- Bergquist, P.R., *see* Duckworth, A.R. et al.
- Bergquist, P.R., *see* Handley, S.J. et al.
- Bernardet, J.-F., *see* Rintamäki-Kinnunen, P. et al.
- Berntsson, K.M., P.R. Jonsson, S.Å. Wängberg and A.S. Carlsson
Effects of broodstock diets on fatty acid composition, survival and growth rates in larvae of the European flat oyster, *Ostrea edulis* 154 (1997) 139
- Bertoja, G., *see* Guarda, F. et al.
- Beullens, K., E.H. Eding, F. Ollevier, J. Komen and C.J.J. Richter
Sex differentiation, changes in length, weight and eye size before and after metamorphosis of European eel (*Anguilla anguilla* L.) maintained in captivity. 153 (1997) 151
- Beullens, K., E.H. Eding, P. Gilson, F. Ollevier, J. Komen and C.J.J. Richter
Gonadal differentiation, intersexuality and sex ratios of European eel (*Anguilla anguilla* L.) maintained in captivity 153 (1997) 135
- Biolatti, B., *see* Guarda, F. et al.
- Bjerkeng, B., M. Følling, S. Lagocki, T. Storebakken, J.J. Olli and N. Alsted
Bioavailability of all-E-astaxanthin and Z-isomers of astaxanthin in rainbow trout (*Oncorhynchus mykiss*) 157 (1997) 63
- Bjerkeng, B., S. Refstie, K.T. Fjalestad, T. Storebakken, M. Rødbotten and A.J. Roem
Quality parameters of the flesh of Atlantic salmon (*Salmo salar*) as affected by dietary fat content and full-fat soybean meal as a partial substitute for fish meal in the diet. . 157 (1997) 297
- Bjerkeng, B., *see* Aas, G.H. et al.
- Black, K.D., *see* Henderson, R.J. et al.

- Black, K.D., *see* Kiemer, M.C.B. et al.
- Blanco, M., *see* Doménech, A. et al.
- Bloigu, A., *see* Rintamäki-Kinnunen, P. et al.
- Boettcher, A.A., C. Dyer, J. Casey and N.M. Targett
 Hydrogen peroxide induced metamorphosis of queen conch, *Strombus gigas*: Tests at the commercial scale 148 (1997) 247
- Boeuf, G., *see* Seddiki, H. et al.
- Boglio, E.C. and J.S. Lucas
 Impacts of ectoparasitic gastropods on growth, survival, and physiology of juvenile giant clams (*Tridacna gigas*), including a simulation model of mortality and reduced growth rate 150 (1997) 25
- Boglione, C., *see* Koumoundouros, G. et al.
- Bongers, A.B.J., B. Zandieh-Doulabi, P.K. Voorthuis, H. Bovenhuis, J. Komen and C.J.J. Richter
 Genetic analysis of testis development in all-male F1 hybrid strains of common carp, *Cyprinus carpio* 158 (1997) 33
- Bongers, A.B.J., H. Bovenhuis, A.C. Van Stokkom, G.F. Wiegertjes, B. Zandieh-Doulabi, J. Komen and C.J.J. Richter
 Distribution of genetic variance in gynogenetic or androgenetic families 153 (1997) 225
- Boon, J.H., *see* Iosifidou, E.G. et al.
- Boonyaratpalin, M.
 Nutrient requirements of marine food fish cultured in Southeast Asia 151 (1997) 283
- Boonyaratpalin, M., *see* Phromkunthong, W. et al.
- Borrego, J.J., *see* Bejar, J. et al.
- Bosworth, B.G., G.S. Libey and D.R. Notter
 Egg, larval, and fingerling traits of crosses among striped bass (*Morone saxatilis*), white bass (*M. chrysops*), and their F1 hybrids 154 (1997) 201
- Bougrier, S., A.J.S. Hawkins and M. Héral
 Preingestive selection of different microalgal mixtures in *Crassostrea gigas* and *Mytilus edulis*, analysed by flow cytometry 150 (1997) 123
- Bourget, E., *see* Harvey, M. et al.
- Bovenhuis, H., *see* Bongers, A.B.J. et al.
- Bovenhuis, H., *see* Bongers, A.B.J. et al.
- Bozzato, G., *see* Barbaro, A. et al.
- Briganti, F., *see* Buschmann, A.H. et al.
- Brito, R., *see* Rosas, C. et al.
- Britz, P.J. and T. Hecht
 Effect of dietary protein and energy level on growth and body composition of South African abalone, *Haliotis midae* 156 (1997) 195
- Britz, P.J., N. Bacela and T. Hecht
 Can crystalline arginine be used to quantify the arginine requirement of abalone? 157 (1997) 95
- Britz, P.J., T. Hecht and S. Mangold
 Effect of temperature on growth, feed consumption and nutritional indices of *Haliotis midae* fed a formulated diet 152 (1997) 191
- Bromage, N.R., *see* Shields, R.J. et al.
- Browdy, C.L., *see* Misamore, M. et al.
- Browdy, C.L., *see* Naessens, E. et al.
- Brown, C.L., *see* Lim, C. et al.
- Brown, J.A., D. Wiseman and P. Kean
 The use of behavioural observations in the larviculture of cold-water marine fish 155 (1997) 297
- Brown, M.R., S.W. Jeffrey, J.K. Volkman and G.A. Dunstan
 Nutritional properties of microalgae for mariculture 151 (1997) 315
- Brown, M.T., *see* Davies, S.J. et al.
- Brown, N.P., *see* Shields, R.J. et al.

- Bruce, M.P., *see* Bell, J.G. et al.
- Brulé, T., *see* Aldana-Aranda, D. et al.
- Buchanan, J., H.Z. Sarac, D. Poppi and R.T. Cowan
Effects of enzyme addition to canola meal in prawn diets 151 (1997) 29
- Buchmann, K., I. Dalsgaard, M.E. Nielsen, K. Pedersen, A. Uldal, J.A. Garcia and J.L. Larsen
Vaccination improves survival of Baltic salmon (*Salmo salar*) smolts in delayed release sea ranching (net-pen period) 156 (1997) 335
- Bullock, G.L., S.T. Summerfelt, A.C. Noble, A.L. Weber, M.D. Durant and J.A. Hankins
Ozonation of a recirculating rainbow trout culture system. I. Effects on bacterial gill disease and heterotrophic bacteria 158 (1997) 43
- Burke, C.M., *see* Hodson, S.L. et al.
- Burke, M.J., *see* Marsden, G.E. et al.
- Buschmann, A.H., F. Briganti and C.A. Retamales
Intertidal cultivation of *Gracilaria chilensis* (Rhodophyta) in southern Chile: long term invertebrate abundance patterns 156 (1997) 269
- Buschmann, A.H., *see* Troell, Max. et al.
- Byatt, J.C., *see* McLean, E. et al.
- Cahu, C., *see* Gatesoupe, F.-J. et al.
- Cahu, C.L., *see* Escaffre, A.M. et al.
- Camara, M.R., *see* Coutteau, P. et al.
- Camilleri, M., *see* Davies, S.J. et al.
- Candia, M., *see* Riquelme, C. et al.
- Capra, M.F., *see* Macaranas, J.M. et al.
- Carillo, M., *see* Bell, J.G. et al.
- Carlsson, A.S., *see* Berntsson, K.M. et al.
- Carrillo, M., *see* Felip, A. et al.
- Cartwright, C.M., *see* Keesing, J.K. et al.
- Casey, J., *see* Boettcher, A.A. et al.
- Catacutan, M.R. and R.M. Coloso
Growth of juvenile Asian seabass, *Lates calcarifer*, fed varying carbohydrate and lipid levels 149 (1997) 137
- Cataudella, S., *see* Koumoundouros, G. et al.
- Cejas, J.R., *see* Ibeas, C. et al.
- Cerenius, L., *see* Lilley, J.H. et al.
- Chakrabarti, L., *see* Jana, B.B. et al.
- Chao, N.-H., T.-T. Lin, Y.-J. Chen, H.-W. Hsu and I.-C. Liao
Cryopreservation of late embryos and early larvae in the oyster and hard clam 155 (1997) 31
- Chartois, H., *see* Person-Le Ruyet, J. et al.
- Chatzifotis, S. and T. Takeuchi
Effect of supplemental carnitine on body weight loss, proximate and lipid compositions and carnitine content of red sea bream (*Pagrus major*) during starvation 158 (1997) 129
- Chavez, R.C., *see* Tan-Fermin, J.D. et al.
- Chen, J.-C. and K.-W. Chen
Oxygen uptake and ammonia-N excretion of juvenile *Penaeus japonicus* during depuration following one-day exposure to different concentrations of saponin at different salinity levels 156 (1997) 77
- Chen, K.-W., *see* Chen, J.-C. et al.
- Chen, Y.-J., *see* Chao, N.-H. et al.
- Chiayvareesajja, S., N. Rittibhobhun, M. Hongpromyart and P. Wiriyaichitra
Toxicity of the Thai piscicidal plant, *Maesa ramentacea*, to freshwater fishes in ponds . . 158 (1997) 229
- Christ, S.A., *see* Toth, G.P. et al.

- Christiansen, R. and O.J. Torrisen
Effects of dietary astaxanthin supplementation on fertilization and egg survival in Atlantic salmon (*Salmo salar* L.) 153 (1997) 51
- Ciereszko, A., *see* Toth, G.P. et al.
- Civera, R., *see* Ezquerro, J.M. et al.
- Clarke, W.C., *see* McLean, E. et al.
- Cohen, A., *see* Lubzens, E. et al.
- Collins, M.D., *see* Doménech, A. et al.
- Colombo, L., *see* Barbaro, A. et al.
- Coloso, R.M., *see* Catacutan, M.R. et al.
- Coman, G.J., *see* Crocos, P.J. et al.
- Cook, P.A., *see* Erasmus, J.H. et al.
- Cooper, J.A., J.M. Pillinger and I. Ridge
Barley straw inhibits growth of some aquatic saprolegniaceous fungi 156 (1997) 157
- Cooper, R., *see* Thongpan, A. et al.
- Coutteau, P., I. Geurden, M.R. Camara, P. Bergot and P. Sorgeloos
Review on the dietary effects of phospholipids in fish and crustacean larviculture 155 (1997) 149
- Coutteau, P., *see* Evjemo, J.O. et al.
- Coutteau, P., *see* Kontara, E.K.M. et al.
- Cowan, R.T., *see* Buchanan, J. et al.
- Coyle, S.D., *see* Tidwell, J.H. et al.
- Coyne, R., M. Hiney and P. Smith
Transient presence of oxytetracycline in blue mussels (*Mytilus edulis*) following its therapeutic use at a marine Atlantic salmon farm 149 (1997) 175
- Coyne, V.E., *see* Erasmus, J.H. et al.
- Craig, S.R. and D.M. Gatlin III
Growth and body composition of juvenile red drum (*Sciaenops ocellatus*) fed diets containing lecithin and supplemental choline 151 (1997) 259
- Crocos, P.J. and G.J. Coman
Seasonal and age variability in the reproductive performance of *Penaeus semisulcatus* broodstock: optimising broodstock selection 155 (1997) 55
- Cui, Y., *see* Hung, S.S.O. et al.
- Cui, Y., *see* Lin, J.-H. et al.
- Cui, Y., *see* Xie, S. et al.
- Cui, Y., *see* Xie, S. et al.
- Cutuli, M.T., *see* Doménech, A. et al.
- Cuzon, G., *see* Amouroux, J.M. et al.
- D'Abramo, L.R., *see* Tidwell, J.H. et al.
- Dabrowski, K., *see* Toth, G.P. et al.
- Dalsgaard, I., *see* Buchmann, K. et al.
- Daniels, W.H., *see* Tidwell, J.H. et al.
- Das, P.M., *see* Hasan, M.R. et al.
- Daube, N., *see* Lubzens, E. et al.
- Davies, I.M., J.G. McHenry and G.H. Rae
Environmental risk from dissolved ivermectin to marine organisms 158 (1997) 263
- Davies, S.J., M.T. Brown and M. Camilleri
Preliminary assessment of the seaweed *Porphyra purpurea* in artificial diets for thick-lipped grey mullet (*Chelon labrosus*) 152 (1997) 249
- DeAnda, D., *see* Qin, J. et al.
- Deering, M.J., D.R. Fielder and D.R. Hewitt
Growth and fatty acid composition of juvenile leader prawns, *Penaeus monodon*, fed different lipids 151 (1997) 131
- De Leenheer, A., *see* Merchie, G. et al.
- Della Rocca, G., *see* Malvisi, J. et al.

- De Monbrison, D., *see* Hassin, S. et al.
- De Silva, S.S., R.M. Gunasekera and C.M. Austin
Changes in the fatty acid profiles of hybrid red tilapia, *Oreochromis mossambicus* × *O. niloticus*, subjected to short-term starvation, and a comparison with changes in seawater raised fish. 153 (1997) 273
- De Silva, S.S., *see* Jones, P.L. et al.
- De Silva, S.S., *see* Sheikh-Eldin, M. et al.
- De Silva, S.S., *see* Tacon, A.G.J. et al.
- Devlin, R.H., *see* McLean, E. et al.
- Díaz-Iglesia, E., *see* Rosas, C. et al.
- Díaz, M., *see* Rodríguez, C. et al.
- Dickhoff, W.W., *see* Shearer, K.D. et al.
- Divanach, P., N. Papandroulakis, P. Anastasiadis, G. Koumoundouros and M. Kentouri
Effect of water currents on the development of skeletal deformities in sea bass (*Dicentrarchus labrax* L.) with functional swimbladder during postlarval and nursery phase 156 (1997) 145
- Divanach, P., *see* Koumoundouros, G. et al.
- Divanach, P., *see* Koumoundouros, G. et al.
- Doménech, A., J.F. Fernández-Garayzábal, P. Lawson, J.A. García, M.T. Cutuli, M. Blanco, A. Gibello, M.A. Moreno, M.D. Collins and L. Domínguez
Winter disease outbreak in sea-bream (*Sparus aurata*) associated with *Pseudomonas anguilliseptica* infection 156 (1997) 317
- Domínguez, L., *see* Doménech, A. et al.
- Donaldson, E.M., *see* McLean, E. et al.
- Donaldson, E.M., *see* Stratholt, M.L. et al.
- Dong, F.M., *see* Skonberg, D.I. et al.
- Drössler, K., *see* Hädge, D. et al.
- Duckworth, A.R., C.N. Battershill and P.R. Bergquist
Influence of explant procedures and environmental factors on culture success of three sponges 156 (1997) 251
- Dunstan, G.A., *see* Brown, M.R. et al.
- Durant, M.D., *see* Bullock, G.L. et al.
- Durant, M.D., *see* Summerfelt, S.T. et al.
- Duray, M.N., C.B. Estudillo and L.G. Alpasan
Larval rearing of the grouper *Epinephelus suillus* under laboratory conditions 150 (1997) 63
- Dureza, L.A., *see* Alapide-Tendencia, E.V. et al.
- Dyer, C., *see* Boettcher, A.A. et al.
- Edgerton, B. and L. Owens
Age at first infection of *Cherax quadricarinatus* by *Cherax quadricarinatus* bacilliform virus and *Cherax* *Giardiavirus*-like virus, and production of putative virus-free crayfish 152 (1997) 1
- Eding, E.H., *see* Beullens, K. et al.
- Eding, E.H., *see* Beullens, K. et al.
- Eggset, G., A. Mortensen, L.-H. Johansen and A.-I. Sommer
Susceptibility to furunculosis, cold water vibriosis, and infectious pancreatic necrosis (IPN) in post-smolt Atlantic salmon (*Salmo salar* L.) as a function of smolt status by seawater transfer 158 (1997) 179
- Elangovan, A. and K.F. Shim
Growth response of juvenile *Barbodes altus* fed isocaloric diets with variable protein levels 158 (1997) 321
- Elizur, A., *see* Hassin, S. et al.
- Elo, K., S. Ivanoff, J.A. Vuorinen and J. Piironen
Inheritance of RAPD markers and detection of interspecific hybridization with brown trout and Atlantic salmon 152 (1997) 55

- Erasmus, J.H., P.A. Cook and V.E. Coyne
The role of bacteria in the digestion of seaweed by the abalone *Haliotis midae* 155 (1997) 377
- Erikson, U., T. Sigholt and A. Seland
Handling stress and water quality during live transportation and slaughter of Atlantic salmon (*Salmo salar*) 149 (1997) 243
- Erkamo, E., *see* Rahkonen, R. et al.
- Ervik, A., P. Kupka Hansen, J. Aure, A. Stigebrandt, P. Johannessen and T. Jahnsen
Regulating the local environmental impact of intensive marine fish farming. I. The concept of the MOM system (Modelling-Ongrowing fish farms-Monitoring) 158 (1997) 85
- Ervik, A., *see* Bent Samuelsen, O. et al.
- Ervik, A., *see* Samuelsen, O.B. et al.
- Escaffre, A.M., J.L. Zambonino Infante, C.L. Cahu, M. Mambrini, P. Bergot and S.J. Kaushik
Nutritional value of soy protein concentrate for larvae of common carp (*Cyprinus carpio*) based on growth performance and digestive enzyme activities. 153 (1997) 63
- Estudillo, C.B., *see* Duray, M.N. et al.
- Evjemo, J.O., P. Coutteau, Y. Olsen and P. Sorgeloos
The stability of docosahexaenoic acid in two *Artemia* species following enrichment and subsequent starvation. 155 (1997) 135
- Eya, J.C. and R.T. Lovell
Available phosphorus requirements of food-size channel catfish (*Ictalurus punctatus*) fed practical diets in ponds. 154 (1997) 283
- Ezquerro, J.M., F.L. García-Carreño, R. Civera and N.F. Haard
pH-stat method to predict protein digestibility in white shrimp (*Penaeus vannamei*) . . . 157 (1997) 251
- Fan, L., *see* Wang, J.-Q. et al.
- Farndale, B.M., *see* Bell, J.G. et al.
- Fast, A.W., *see* Qin, J. et al.
- Feigin, P., *see* Lubzens, E. et al.
- Felip, A., S. Zanuy, M. Carrillo, G. Martínez, J. Ramos and F. Piferrer
Optimal conditions for the induction of triploidy in the sea bass (*Dicentrarchus labrax* L.). 152 (1997) 287
- Fermin, A.C. and G.A. Seronay
Effects of different illumination levels on zooplankton abundance, feeding periodicity, growth and survival of the Asian sea bass, *Lates calcarifer* (Bloch), fry in illuminated floating nursery cages 157 (1997) 227
- Fernández-Carmona, J., *see* Pérez, L. et al.
- Fernández-Díaz, C. and M. Yúfera
Detecting growth in gilthead seabream, *Sparus aurata* L., larvae fed microcapsules . . . 153 (1997) 93
- Fernandez, F., *see* Guinea, J. et al.
- Fernández-Garayzábal, J.F., *see* Doménech, A. et al.
- Fernández-Palacios, H., M. Izquierdo, L. Robaina, A. Valencia, M. Salhi and D. Montero
The effect of dietary protein and lipid from squid and fish meals on egg quality of broodstock for gilthead seabream (*Sparus aurata*) 148 (1997) 233
- Fernández-Palacios, H., *see* Rodríguez, C. et al.
- Fernández-Reiriz, M.J., *see* Albentosa, M. et al.
- Fernández-Reiriz, M.J., *see* Albentosa, M. et al.
- Fetzner Jr., J.W., R.J. Sheehan and L.W. Seeb
Genetic implications of broodstock selection for crayfish aquaculture in the Midwestern United States 154 (1997) 39
- Fielder, D.R., *see* Deering, M.J. et al.
- Fjalestad, K.T., *see* Bjerkeng, B. et al.
- Fletcher, D.J., *see* Jones, D.A. et al.
- Flores-Nava, A. and E. Gasca-Leyva
Use of artificial grazing substrates in bullfrog tadpole culture 152 (1997) 91

- Følling, M., *see* Bjerkeng, B. et al.
- Fontaine, P., J.N. Gardeur, P. Kestemont and A. Georges
 - Influence of feeding level on growth, intraspecific weight variability and sexual growth dimorphism of Eurasian perch *Perca fluviatilis* L. reared in a recirculation system . . 157 (1997) 1
- Fores, R., *see* Ibeas, C. et al.
- Forrest, D.A.M., *see* Henderson, R.J. et al.
- Foster, B.G., *see* Scott, T. et al.
- Foy, R., *see* Weatherup, R.N. et al.
- Foyle, T.P., J.D. Bell, M. Gervis and I. Lane
 - Survival and growth of juvenile fluted giant clams, *Tridacna squamosa*, in large-scale grow-out trials in the Solomon Islands 148 (1997) 85
- Foyle, T.P., *see* Ramofafia, C. et al.
- Francescon, A., *see* Barbaro, A. et al.
- Fukuda, Y., *see* Kawakami, H. et al.
- Fuller, M.J., *see* Tidwell, J.H. et al.
- Gagliardi, F., *see* Koumoundouros, G. et al.
- Gagné, N., *see* Harvey, M. et al.
- Galeotti, M., *see* Jeney, G. et al.
- Gall, G.A.E., *see* Su, G.-S. et al.
- Galland, R., *see* Person-Le Ruyet, J. et al.
- Galleotti, M., *see* Bakopoulos, V. et al.
- García-Carreño, F.L., *see* Ezquerro, J.M. et al.
- García-Carreño, F.L., *see* Serviere-Zaragoza, E. et al.
- Garcia, D.K., *see* Wolfus, G.M. et al.
- García, J.A., *see* Doménech, A. et al.
- Garcia, J.A., *see* Buchmann, K. et al.
- García-Martín, L.O., *see* Jara-Jara, R. et al.
- Gardeur, J.N., *see* Fontaine, P. et al.
- Gardner, C. and M. Northam
 - Use of prophylactic treatments for larval rearing of giant crabs *Pseudocarcinus gigas* (Lamarck) 158 (1997) 203
- Gasca-Leyva, E., *see* Flores-Nava, A. et al.
- Gasith, A., *see* Shpigel, M. et al.
- Gatesoupe, F.-J., J.-L. Zambonino Infante, C. Cahu and P. Quazuguel
 - Early weaning of seabass larvae, *Dicentrarchus labrax*: the effect on microbiota, with particular attention to iron supply and exoenzymes 158 (1997) 117
- Gatlin III, D.M., *see* Craig, S.R. et al.
- Georges, A., *see* Fontaine, P. et al.
- Gervis, M., *see* Foyle, T.P. et al.
- Gesteira, T.C.V., *see* Nunes, A.J.P. et al.
- Geurden, I., *see* Coutteau, P. et al.
- Gibello, A., *see* Doménech, A. et al.
- Gilson, P., *see* Beullens, K. et al.
- Gingerich, W.H., *see* Meinertz, J.R. et al.
- Giorgetti, G., *see* Malvisi, J. et al.
- Giri, I.N.A., S.-i. Teshima, A. Kanazawa and M. Ishikawa
 - Effects of dietary pyridoxine and protein levels on growth, vitamin B₆ content, and free amino acid profile of juvenile *Penaeus japonicus*. 157 (1997) 263
- Gisbert, E. and P. Williot
 - Larval behaviour and effect of the timing of initial feeding on growth and survival of Siberian sturgeon (*Acipenser baeri*) larvae under small scale hatchery production . . 156 (1997) 63
- Gissis, A., *see* Mylonas, C.C. et al.
- Gjedrem, T., *see* Jónasson, J. et al.
- Gjedrem, T., *see* Jónasson, J. et al.

- Gjerde, B., *see* Gjen, H.M. et al.
 Gjerde, B., *see* Jnasson, J. et al.
 Gjerde, B., *see* Lein, I. et al.
 Gjen, H.M., T. Refstie, O. Ulla and B. Gjerde
 Genetic correlations between survival of Atlantic salmon in challenge and field tests . . . 158 (1997) 277
 Goddard, S., *see* Nunes, A.J.P. et al.
 Goldan, O., D. Popper and I. Karplus
 Management of size variation in juvenile gilthead sea bream (*Sparus aurata*). I: Particle size and frequency of feeding dry and live food. 152 (1997) 181
 Gomez, L., *see* Naessens, E. et al.
 Gmez, T., *see* Ibeas, C. et al.
 Gong, Z., *see* He, J. et al.
 Gonzalez, H., *see* Prez, L. et al.
 Gonzlez-Tizn, A., *see* Martnez-Lage, A. et al.
 Grahl-Madsen, E. and Ø. Lie
 Effects of different levels of vitamin K in diets for cod (*Gadus morhua*) 151 (1997) 269
 Grant, A., *see* Treasurer, J.W. et al.
 Gray, J.P., *see* Herwig, R.P. et al.
 Gray, J.P., *see* Herwig, R.P. et al.
 Grmare, A., *see* Amouroux, J.M. et al.
 Grisdale-Helland, B. and S.J. Helland
 Replacement of protein by fat and carbohydrate in diets for atlantic salmon (*Salmo salar*) at the end of the freshwater stage. 152 (1997) 167
 Grisdale-Helland, B., *see* Helland, S.J. et al.
 Grisez, L., J. Reyniers, L. Verdonck, J. Swings and F. Ollevier
 Dominant intestinal microflora of sea bream and sea bass larvae, from two hatcheries, during larval development 155 (1997) 387
 Grisez, L., *see* Verdonck, L. et al.
 Grizzle, J.M., *see* Webster, C.D. et al.
 Gropp, J.M., *see* Schuhmacher, A. et al.
 Guaita, M., *see* Riquelme, C. et al.
 Guarda, F., G. Bertoja, I. Zoccarato, E. Tartari and B. Biolatti
 Spontaneous steatitis of epicardial fat in farmed white sturgeon (*Acipenser transmontanus*) 158 (1997) 167
 Guinea, J. and F. Fernandez
 Effect of feeding frequency, feeding level and temperature on energy metabolism in *Sparus aurata* 148 (1997) 125
 Gunasekera, R.M. and T.J. Lam
 Influence of dietary protein level on ovarian recrudescence in Nile tilapia, *Oreochromis niloticus* (L.) 149 (1997) 57
 Gunasekera, R.M., K.F. Shim and T.J. Lam
 Influence of dietary protein content on the distribution of amino acids in oocytes, serum and muscle of Nile tilapia, *Oreochromis niloticus* (L.) 152 (1997) 205
 Gunasekera, R.M., *see* De Silva, S.S. et al.
 Guy Jr., C.B., *see* Perschbacher, P.W. et al.
 Gydemo, R.
 Signal crayfish, *Pacifastacus leniusculus*, as a vector for *Psorospermium haeckeli* to noble crayfish, *Astacus astacus* 148 (1996) 1
 Haagsma, N., *see* Iosifidou, E.G. et al.
 Haard, N.F., *see* Ezquerro, J.M. et al.
 Habib, M.A.B., F.M. Yusoff, S.M. Phang, K.J. Ang and S. Mohamed
 Nutritional values of chironomid larvae grown in palm oil mill effluent and algal culture. 158 (1997) 95

- Hädge, D., I. Lachmann, U. Wagner and K. Drössler
Characterization of core-oligosaccharide- and O-polysaccharide-specific monoclonal antibodies against *Aeromonas salmonicida* LPS binding to typical and atypical *Aeromonas salmonicida* isolates 157 (1997) 157
- Hagiwara, A., M.D. Balompapueng, N. Munuswamy and K. Hirayama
Mass production and preservation of the resting eggs of the euryhaline rotifer *Brachionus plicatilis* and *B. rotundiformis* 155 (1997) 223
- Hahn, K., see Lim, C. et al.
- Halford, A.R., see Keesing, J.K. et al.
- Hall, K.C., see Keesing, J.K. et al.
- Halling, C., see Troell, Max. et al.
- Handley, S.J. and P.R. Bergquist
Spionid polychaete infestations of intertidal pacific oysters *Crassostrea gigas* (Thunberg), Mahurangi Harbour, northern New Zealand 153 (1997) 191
- Hanin, Y., see Hassin, S. et al.
- Hankins, J.A., see Bullock, G.L. et al.
- Hankins, J.A., see Summerfelt, S.T. et al.
- Hansen, L.P., see Lund, R.A. et al.
- Hansen, M.M., K.-L.D. Mensberg, G. Rasmussen and V. Simonsen
Genetic variation within and among Danish brown trout (*Salmo trutta* L.) hatchery strains, assessed by PCR-RFLP analysis of mitochondrial DNA segments. 153 (1997) 15
- Hansford, S.W., see Marsden, G.E. et al.
- Haq, M.S., see Hasan, M.R. et al.
- Hardy, R.W., see Skonberg, D.I. et al.
- Haroon, A.K.Y. and K.A. Pittman
Rice-fish culture: feeding, growth and yield of two size classes of *Puntius gonionotus* Bleeker and *Oreochromis* spp. in Bangladesh. 154 (1997) 261
- Harpaz, S.
Enhancement of growth in juvenile freshwater prawns, *Macrobrachium rosenbergii*, through the use of a chemoattractant 156 (1997) 221
- Harvey, M., E. Bourget and N. Gagné
Spat settlement of the giant scallop, *Placopecten magellanicus* (Gmelin, 1791), and other bivalve species on artificial filamentous collectors coated with chitinous material 148 (1997) 277
- Hasan, M.R., D.J. Macintosh and K. Jauncey
Evaluation of some plant ingredients as dietary protein sources for common carp (*Cyprinus carpio* L.) fry 151 (1997) 55
- Hasan, M.R., M.S. Haq, P.M. Das and G. Mowlah
Evaluation of poultry-feather meal as a dietary protein source for Indian major carp, *Labeo rohita* fry 151 (1997) 47
- Hassin, S., D. De Monbrison, Y. Hanin, A. Elizur, Y. Zohar and D.M. Popper
Domestication of the white grouper, *Epinephelus aeneus*. 1. Growth and reproduction . . 156 (1997) 305
- Hatlen, B., see Aas, G.H. et al.
- Hawkins, A.J.S., see Bougrier, S. et al.
- He, J., Z. Yin, G. Xu, Z. Gong, T.J. Lam and Y.M. Sin
Protection of goldfish against *Ichthyophthirius multifiliis* by immunization with a recombinant vaccine 158 (1997) 1
- Heasman, M.P., see O'Connor, W.A. et al.
- Hecht, T., see Britz, P.J. et al.
- Hecht, T., see Britz, P.J. et al.
- Hecht, T., see Britz, P.J. et al.
- Helland, S.J., B. Grisdale-Helland and G.M. Berge
Feed intake and growth of Atlantic halibut (*Hippoglossus hippoglossus* L.) fed combinations of pellet sizes 156 (1997) 1

- Helland, S.J., *see* Grisdale-Helland, B. et al.
- Helland, S.J., *see* Refstie, S. et al.
- Henderson, R.J., D.A.M. Forrest, K.D. Black and M.T. Park
The lipid composition of sealoch sediments underlying salmon cages 158 (1997) 69
- Henderson, R.J., *see* Koven, W.M. et al.
- Hengsawat, K., F.J. Ward and P. Jaruratjamorn
The effect of stocking density on yield, growth and mortality of African catfish (*Clarias gariepinus* Burchell 1822) cultured in cages 152 (1997) 67
- Henttonen, P., J.V. Huner, P. Rata and O.V. Lindqvist
A comparison of the known life forms of *Psorospermium* spp. in freshwater crayfish (Arthropoda, decapoda) with emphasis on *Astacus astacus* L. (Astacidae) and *Procambarus clarkii* (Girard) (Cambaridae). 149 (1997) 15
- Héral, M., *see* Bougrier, S. et al.
- Hernández, O., *see* Maeda-Martínez, A.N. et al.
- Herwig, R.P. and J.P. Gray
Microbial response to antibacterial treatment in marine microcosms 152 (1997) 139
- Herwig, R.P., J.P. Gray and D.P. Weston
Antibacterial resistant bacteria in surficial sediments near salmon net-cage farms in Puget Sound, Washington 149 (1997) 263
- Hewitt, D.R., *see* Deering, M.J. et al.
- Hill Jr., S.J., *see* Tidwell, J.H. et al.
- Hilomen-Garcia, G.V.
Morphological abnormalities in hatchery-bred milkfish (*Chanos chanos* Forsskal) fry and juveniles 152 (1997) 155
- Hiney, M., *see* Coyne, R. et al.
- Hirayama, K., *see* Hagiwara, A. et al.
- Hodson, S.L., T.E. Lewis and C.M. Burke
Biofouling of fish-cage netting: efficacy and problems of in situ cleaning 152 (1997) 77
- Hoey, R., *see* Weatherup, R.N. et al.
- Hofmann, E.E., *see* Kobayashi, M. et al.
- Holmefjord, I., *see* Lein, I. et al.
- Holmefjord, I., *see* Lein, I. et al.
- Hongpromyart, M., *see* Chiayvareesajja, S. et al.
- Hooper, J.N.A., *see* Wesche, S.J. et al.
- Hosokawa, H., *see* Ruchimat, T. et al.
- Hosokawa, H., *see* Ruchimat, T. et al.
- Hosokawa, H., *see* Shimeno, S. et al.
- Hossain, M.A., N. Nahar and M. Kamal
Nutrient digestibility coefficients of some plant and animal proteins for rohu (*Labeo rohita*) 151 (1997) 37
- Howe, G.E., *see* Rach, J.J. et al.
- Howell, B.R.
A re-appraisal of the potential of the sole, *Solea solea* (L.), for commercial cultivation. 155 (1997) 355
- Hsu, H.-W., *see* Chao, N.-H. et al.
- Hulata, G., *see* Barki, A. et al.
- Hulata, G., *see* Sagi, A. et al.
- Huner, J.V., *see* Henttonen, P. et al.
- Hung, S.S.O., W. Liu, H. Li, T. Storebakken and Y. Cui
Effect of starvation on some morphological and biochemical parameters in white sturgeon, *Acipenser transmontanus* 151 (1997) 357
- Hung, S.S.O., *see* Lin, J.-H. et al.
- Ibeas, C., J.R. Cejas, R. Fores, P. Badía, T. Gómez and A. Lorenzo Hernández
Influence of eicosapentaenoic to docosahexaenoic acid ratio (EPA/DHA) of dietary lipids on growth and fatty acid composition of gilthead seabream (*Sparus aurata*) juveniles 150 (1997) 91

- Ingles, J.A., *see* Tumanda Jr., M.I. et al.
- Ingram, B.A., *see* Sheikh-Eldin, M. et al.
- Iosifidou, E.G., N. Haagsma, M.W.T. Tanck, J.H. Boon and M. Olling
Depletion study of fenbendazole in rainbow trout (*Oncorhynchus mykiss*) after oral and bath treatment 154 (1997) 191
- Ishikawa, M., *see* Giri, I.N.A. et al.
- Itoh, Y., *see* Ruchimat, T. et al.
- Ivanoff, S., *see* Elo, K. et al.
- Izquierdo, M., *see* Fernández-Palacios, H. et al.
- Izquierdo, M.S., *see* Aksnes, A. et al.
- Izquierdo, M.S., *see* Kolkovski, S. et al.
- Izquierdo, M.S., *see* Robaina, L. et al.
- Izquierdo, M.S., *see* Rodríguez, C. et al.
- Jahnsen, T., *see* Ervik, A. et al.
- Jana, B.B. and L. Chakrabarti
Effect of manuring rate on in situ production of zooplankton *Daphnia carinata* 156 (1997) 85
- Jara-Jara, R., A.J. Pazos, M. Abad, L.O. García-Martín and J.L. Sánchez
Growth of clam seed (*Ruditapes decussatus*) reared in the wastewater effluent from a fish farm in Galicia (N.W. Spain) 158 (1997) 247
- Jaruratjamorn, P., *see* Hengsawat, K. et al.
- Jauncey, K., *see* Hasan, M.R. et al.
- Jeffrey, S.W., *see* Brown, M.R. et al.
- Jeney, G., M. Galeotti, D. Volpatti, Z. Jeney and D.P. Anderson
Prevention of stress in rainbow trout (*Oncorhynchus mykiss*) fed diets containing different doses of glucan 154 (1997) 1
- Jeney, Z., *see* Jeney, G. et al.
- Jobling, M., *see* Koskela, J. et al.
- Johannessen, P., *see* Ervik, A. et al.
- Johansen, L.-H., *see* Eggset, G. et al.
- Johnson, S.K., *see* Perera, R.P. et al.
- Jónasson, J. and T. Gjedrem
Genetic correlation for body weight of Atlantic salmon grilse between fish in sea ranching and land-based farming 157 (1997) 205
- Jónasson, J., B. Gjerde and T. Gjedrem
Genetic parameters for return rate and body weight of sea-ranched Atlantic salmon . . . 154 (1997) 219
- Jones, D.A., M. Kumlu, L. Le Vay and D.J. Fletcher
The digestive physiology of herbivorous, omnivorous and carnivorous crustacean larvae: a review. 155 (1997) 285
- Jones, P.L. and S.S. De Silva
Influence of differential movement of the marker chromic oxide and nutrients on digestibility estimations in the Australian freshwater crayfish *Cherax destructor* . . . 154 (1997) 323
- Jones, P.L., *see* Austin, C.M. et al.
- Jonsson, P.R., *see* Berntsson, K.M. et al.
- Jover, M., *see* Pérez, L. et al.
- Jussila, J. and A. Mannonen
Marron (*Cherax tenuimanus*) and noble crayfish (*Astacus astacus*) hepatopancreas energy and its relationship to moisture content 149 (1997) 157
- Kadri, S., J.E. Thorpe and N.B. Metcalfe
Anorexia in one-sea-winter Atlantic salmon (*Salmo salar*) during summer, associated with sexual maturation 151 (1997) 405
- Kallio-Nyberg, I. and M.-L. Koljonen
The genetic consequence of hatchery-rearing on life-history traits of the Atlantic salmon (*Salmo salar* L.): a comparative analysis of sea-ranched salmon with wild and reared parents. 153 (1997) 207

- Kamal, M., *see* Hossain, M.A. et al.
- Kanaujia, D.R., A.N. Mohanty and S.D. Tripathi
 Growth and production of Indian river prawn *Macrobrachium malcolmsonii* (H. Milne Edwards) under pond conditions 154 (1997) 79
- Kanazawa, A.
 Effects of docosahexaenoic acid and phospholipids on stress tolerance of fish 155 (1997) 129
- Kanazawa, A., *see* Giri, I.N.A. et al.
- Kanazawa, A., *see* Millamena, O.M. et al.
- Karanikolas, K.K., *see* Alexis, M.N. et al.
- Karplus, I., *see* Barki, A. et al.
- Karplus, I., *see* Barki, A. et al.
- Karplus, I., *see* Goldan, O. et al.
- Karplus, I., *see* Sagi, A. et al.
- Karunasagar, I., S.K. Otta and I. Karunasagar
 Histopathological and bacteriological study of white spot syndrome of *Penaeus monodon* along the west coast of India. 153 (1997) 9
- Karunasagar, I., *see* Karunasagar, I. et al.
- Kaushik, S.J., *see* Escaffre, A.M. et al.
- Kautsky, L., *see* Troell, Max. et al.
- Kautsky, N., *see* Troell, Max. et al.
- Kawahigashi, D., *see* Naessens, E. et al.
- Kawakami, H., N. Shinohara, Y. Fukuda, H. Yamashita, H. Kihara and M. Sakai
 The efficacy of lipopolysaccharide mixed chloroform-killed cell (LPS-CKC) bacterin of *Pasteurella piscicida* on Yellowtail, *Seriola quinqueradiata* 154 (1997) 95
- Kawamura, T., *see* Takami, H. et al.
- Kean, P., *see* Brown, J.A. et al.
- Keesing, J.K., A.R. Halford, K.C. Hall and C.M. Cartwright
 Large-scale laboratory culture of the crown-of-thorns starfish *Acanthaster planci* (L.) (Echinodermata: Asteroidea). 157 (1997) 215
- Kent, M.L., *see* St-Hilaire, S. et al.
- Kentouri, M., *see* Divanach, P. et al.
- Kentouri, M., *see* Koumoundouros, G. et al.
- Kentouri, M., *see* Koumoundouros, G. et al.
- Kentouri, M., *see* Rotllant, J. et al.
- Kenway, M., *see* Benzie, J.A.H. et al.
- Kerry, J., S. NicGabhainn and P. Smith
 Changes in oxytetracycline resistance of intestinal microflora following oral administration of this agent to Atlantic Salmon (*Salmo salar* L.) smolts in a marine environment 157 (1997) 187
- Kestemont, P., *see* Fontaine, P. et al.
- Khajarearn, J. and S. Khajarearn
 Stability and bioavailability of vitamin C-glucose in *Clarias* hybrid catfish (*Clarias gariepinus* × *Clarias macrocephalus*). 151 (1997) 219
- Khajarearn, S., *see* Khajarearn, J. et al.
- Kheyyali, D., *see* Shimeno, S. et al.
- Kiemer, M.C.B. and K.D. Black
 The effects of hydrogen peroxide on the gill tissues of Atlantic salmon, *Salmo salar* L. . . 153 (1997) 181
- Kihara, H., *see* Kawakami, H. et al.
- Kim, K.-I.
 Re-evaluation of protein and amino acid requirements of rainbow trout (*Oncorhynchus mykiss*) 151 (1997) 3
- Kimmel, E., *see* Shpigel, M. et al.
- Kiron, V., *see* Watanabe, T. et al.

- Kittaka, J.
Application of ecosystem culture method for complete development of phyllosomas of spiny lobster 155 (1997) 319
- Klesius, P.H. and C.A. Shoemaker
Heterologous isolates challenge of channel catfish, *Ictalurus punctatus*, immune to *Edwardsiella ictaluri* 157 (1997) 147
- Klesius, P.H., *see* Lim, C. et al.
- Klinck, J.M., *see* Kobayashi, M. et al.
- Knauer, J. and P.C. Southgate
Assimilation of gelatin-acacia microencapsulated lipid by Pacific oyster (*Crassostrea gigas*) spat 153 (1997) 291
- Knauer, J. and P.C. Southgate
Growth and fatty acid composition of Pacific oyster (*Crassostrea gigas*) spat fed a spray-dried freshwater microalga (*Spongiococcum excentricum*) and microencapsulated lipids 154 (1997) 293
- Knight, W.L., *see* Tidwell, J.H. et al.
- Kobayashi, M., E.E. Hofmann, E.N. Powell, J.M. Klinck and K. Kusaka
A population dynamics model for the Japanese oyster, *Crassostrea gigas* 149 (1997) 285
- Koljonen, M.-L., *see* Kallio-Nyberg, I. et al.
- Kolkovski, S., A. Tandler and M.S. Izquierdo
Effects of live food and dietary digestive enzymes on the efficiency of microdiets for seabass (*Dicentrarchus labrax*) larvae 148 (1997) 313
- Kolkovski, S., W. Koven and A. Tandler
The mode of action of *Artemia* in enhancing utilization of microdiet by gilthead seabream *Sparus aurata* larvae 155 (1997) 193
- Komen, J., *see* Beullens, K. et al.
- Komen, J., *see* Beullens, K. et al.
- Komen, J., *see* Bongers, A.B.J. et al.
- Komen, J., *see* Bongers, A.B.J. et al.
- Kontara, E.K.M., P. Coutteau and P. Sorgeloos
Effect of dietary phospholipid on requirements for and incorporation of $n-3$ highly unsaturated fatty acids in postlarval *Penaeus japonicus* Bate 158 (1997) 305
- Koskela, J., M. Jobling and J. Pirhonen
Influence of the length of the daily feeding period on feed intake and growth of whitefish, *Coregonus lavaretus* 156 (1997) 35
- Koumoundouros, G., F. Gagliardi, P. Divanach, C. Boglione, S. Cataudella and M. Kentouri
Normal and abnormal osteological development of caudal fin in *Sparus aurata* L. fry . . 149 (1997) 215
- Koumoundouros, G., G. Oran, P. Divanach, S. Stefanakis and M. Kentouri
The opercular complex deformity in intensive gilthead sea bream (*Sparus aurata* L.) larviculture. Moment of apparition and description 156 (1997) 165
- Koumoundouros, G., *see* Divanach, P. et al.
- Koven, W., *see* Kolkovski, S. et al.
- Koven, W.M., R.J. Henderson and J.R. Sargent
Lipid digestion in turbot (*Scophthalmus maximus*): in-vivo and in-vitro studies of the lipolytic activity in various segments of the digestive tract 151 (1997) 155
- Kubitza, F. and L.L. Lovshin
Effects of initial weight and genetic strain on feed training largemouth bass *Micropterus salmoides* using ground fish flesh and freeze dried krill as starter diets 148 (1997) 179
- Kubitza, F. and L.L. Lovshin
Pond production of pellet-fed advanced juvenile and food-size largemouth bass 149 (1997) 253
- Kubitza, F. and L.L. Lovshin
The use of freeze-dried krill to feed train largemouth bass (*Micropterus salmoides*): feeds and training strategies 148 (1997) 299

- Kubitza, F., L.L. Lovshin and R.T. Lovell
 Identification of feed enhancers for juvenile largemouth bass *Micropterus salmoides* . . . 148 (1997) 191
- Kumlu, M., *see* Jones, D.A. et al.
- Kupka Hansen, P., *see* Ervik, A. et al.
- Kusaka, K., *see* Kobayashi, M. et al.
- Kuz'mina, V.V.
 Influence of age on digestive enzyme activity in some freshwater teleosts 148 (1996) 25
- Labarta, U., *see* Albentosa, M. et al.
- Labarta, U., *see* Albentosa, M. et al.
- Lachmann, I., *see* Hädige, D. et al.
- Lagibalavu, M., *see* Macaranas, J.M. et al.
- Lagocki, S., *see* Bjerkeng, B. et al.
- Lakra, W.S., *see* Pandey, N. et al.
- Lal, S.N., *see* Macaranas, J.M. et al.
- Lam, T.J., *see* Gunasekera, R.M. et al.
- Lam, T.J., *see* Gunasekera, R.M. et al.
- Lam, T.J., *see* He, J. et al.
- Lane, I., *see* Foyle, T.P. et al.
- Lanfer Marquez, U.M., *see* Lourenço, S.O. et al.
- Larsen, J.L., *see* Buchmann, K. et al.
- Lavens, P., *see* Merchie, G. et al.
- Lavens, P., *see* Merchie, G. et al.
- Lavens, P., *see* Naessens, E. et al.
- Lawson, P., *see* Doménech, A. et al.
- Lee, C.-S., P.-S. Leung and M.-S. Su
 Bioeconomic evaluation of different fry production systems for milkfish (*Chanos chanos*) 155 (1997) 367
- Lein, I., I. Holmefjord and M. Rye
 Effects of temperature on yolk sac larvae of Atlantic halibut (*Hippoglossus hippoglossus* L.). 157 (1997) 123
- Lein, I., S. Tveite, B. Gjerde and I. Holmefjord
 Effects of salinity on yolk sac larvae of Atlantic halibut (*Hippoglossus hippoglossus* L.). 156 (1997) 291
- Lellis, W.A. and F.T. Barrows
 The effect of diet on dorsal fin erosion in steelhead trout (*Oncorhynchus mykiss*). 156 (1997) 229
- Lellis, W.A., *see* Tucker, Jr., J.W. et al.
- Le Roux, A., *see* Person-Le Ruyet, J. et al.
- Leung, K.Y., L.S. Wong, K.W. Low and Y.M. Sin
 Mini-Tn5 induced growth- and protease-deficient mutants of *Aeromonas hydrophila* as live vaccines for blue gourami, *Trichogaster trichopterus* (Pallas) 158 (1997) 11
- Leung, P.-S., *see* Lee, C.-S. et al.
- Le Vay, L., *see* Jones, D.A. et al.
- Levi, T., *see* Barki, A. et al.
- Levi, T., *see* Barki, A. et al.
- Levy, T., *see* Sagi, A. et al.
- Lewis, D.H., *see* Perera, R.P. et al.
- Lewis, T.E., *see* Hodson, S.L. et al.
- Li, H., *see* Hung, S.S.O. et al.
- Li, H., *see* Tong, S.-L. et al.
- Liao, I.-C., *see* Chao, N.-H. et al.
- Libey, G.S., *see* Bosworth, B.G. et al.
- Lie, Ø., *see* Grahl-Madsen, E. et al.
- Lie, Ø., *see* Rønnestad, I. et al.
- Lightner, D.V., *see* Mohny, L.L. et al.
- Liley, N.R., *see* Stratholt, M.L. et al.

- Liljedahl, L.-E., *see* Su, G.-S. et al.
- Lilley, J.H., L. Cerenius and K. Söderhäll
RAPD evidence for the origin of crayfish plague outbreaks in Britain 157 (1997) 181
- Lim, C. and P.H. Klesius
Responses of channel catfish (*Ictalurus punctatus*) fed iron-deficient and replete diets to
Edwardsiella ictaluri challenge 157 (1997) 83
- Lim, C., H. Ako, C.L. Brown and K. Hahn
Growth response and fatty acid composition of juvenile *Penaeus vannamei* fed different
sources of dietary lipid 151 (1997) 143
- Lin, J.-H., Y. Cui, S.S.O. Hung and S.-Y. Shiau
Effect of feeding strategy and carbohydrate source on carbohydrate utilization by white
sturgeon (*Acipenser transmontanus*) and hybrid tilapia (*Oreochromis niloticus* × *O.*
aureus) 148 (1997) 201
- Lin, T.-T., *see* Chao, N.-H. et al.
- Lindqvist, O.V., *see* Henttonen, P. et al.
- Liu, J., *see* Xie, S. et al.
- Liu, J., *see* Xie, S. et al.
- Liu, W., *see* Hung, S.S.O. et al.
- López, M.G., *see* Tumanda Jr., M.I. et al.
- Lorenzo, A., *see* Rodríguez, C. et al.
- Lorenzo Hernández, A., *see* Ibeas, C. et al.
- Lourenço, S.O., U.M. Lanfer Marquez, J. Mancini-Filho, E. Barbarino and E. Aidar
Changes in biochemical profile of *Tetraselmis gracilis* I. Comparison of two culture
media 148 (1997) 153
- Lovell, R.T., *see* Eya, J.C. et al.
- Lovell, R.T., *see* Kubitz, F. et al.
- Lovell, R.T., *see* Wang, C. et al.
- Lovshin, L.L., *see* Kubitz, F. et al.
- Lovshin, L.L., *see* Kubitz, F. et al.
- Lovshin, L.L., *see* Kubitz, F. et al.
- Lovshin, L.L., *see* Kubitz, F. et al.
- Low, K.W., *see* Leung, K.Y. et al.
- Lubzens, E., N. Daube, I. Pekarsky, Y. Magnus, A. Cohen, F. Yusefovich and P. Feigin
Carp (*Cyprinus carpio* L.) spermatozoa cryobanks — strategies in research and
application 155 (1997) 13
- Lucas, J.S., *see* Boglio, E.C. et al.
- Ludwig, G.M., *see* Perschbacher, P.W. et al.
- Lui, H., *see* Wang, J.-Q. et al.
- Lund, R.A., P.J. Midtlyng and L.P. Hansen
Post-vaccination intra-abdominal adhesions as a marker to identify Atlantic salmon,
Salmo salar L., escaped from commercial fish farms 154 (1997) 27
- Macaranas, J.M., P.B. Mather, S.N. Lal, T. Vereivalu, M. Lagibalavu and M.F. Capra
Genotype and environment: A comparative evaluation of four tilapia stocks in Fiji 150 (1997) 11
- Macintosh, D.J., *see* Hasan, M.R. et al.
- Madrones-Ladja, J.A.
Notes on the induced spawning, embryonic and larval development of the window-pane
shell, *Placuna placenta* (Linnaeus, 1758), in the laboratory 157 (1997) 137
- Maeda, I., *see* Uno, K. et al.
- Maeda, M., *see* Uchida, M. et al.
- Maeda-Martínez, A.N., T. Reynoso-Granados, P. Monsalvo-Spencer, M.T. Sicard, J.M.
Mazón-Suástegui, O. Hernández, E. Segovia and R. Morales
Suspension culture of catarina scallop *Argopecten ventricosus* (= *circularis*) (Sowerby
II, 1842), in Bahia Magdalena, Mexico, at different densities 158 (1997) 235
- Magallón, F., *see* Méndez, L. et al.

- Magnus, Y., *see* Lubzens, E. et al.
 Magnus, Y., *see* Mylonas, C.C. et al.
 Mairs, R.J., *see* Weatherup, R.N. et al.
 Makridis, P., *see* Øie, G. et al.
 Malvisi, J., G. Della Rocca, P. Anfossi and G. Giorgetti
 Tissue distribution and depletion of flumequine after in-feed administration in sea bream
 (*Sparus aurata*) 157 (1997) 197
 Mambrini, M., *see* Escaffre, A.M. et al.
 Mancini-Filho, J., *see* Lourenço, S.O. et al.
 Mangold, S., *see* Britz, P.J. et al.
 Mannonen, A., *see* Jussila, J. et al.
 Marsden, G.E., J.J. McGuren, S.W. Hansford and M.J. Burke
 A moist artificial diet for prawn broodstock: its effect on the variable reproductive
 performance of wild caught *Penaeus monodon* 149 (1997) 145
 Martinez, E., *see* Rosas, C. et al.
 Martínez, G., *see* Felip, A. et al.
 Martínez-Lage, A., A. González-Tizón, J. Ausió and J. Méndez
 Karyotypes and Ag-NORs of the mussels *Mytilus californianus* and *M. trossulus* from
 the Pacific Canadian coast 153 (1997) 239
 Martinez-Palacios, C.A., *see* Ponce-Palafox, J. et al.
 Masumoto, T., *see* Ruchimat, T. et al.
 Masumoto, T., *see* Ruchimat, T. et al.
 Masumoto, T., *see* Shimeno, S. et al.
 Mather, P.B., *see* Macaranas, J.M. et al.
 Maxime, V., *see* Seddiki, H. et al.
 Mazid, M.A., M. Zaher, N.N. Begum, M.Z. Ali and F. Nahar
 Formulation of cost-effective feeds from locally available ingredients for carp polycul-
 ture system for increased production 151 (1997) 71
 Mazón-Suástegui, J.M., *see* Maeda-Martínez, A.N. et al.
 Mazzola, A., *see* Sarà, G. et al.
 McCracken, K.J., *see* Weatherup, R.N. et al.
 McEvoy, L.A., *see* Sargent, J.R. et al.
 McGovern-Hopkins, K., *see* Naessens, E. et al.
 McGuren, J.J., *see* Marsden, G.E. et al.
 McHenery, J.G., *see* Davies, I.M. et al.
 McKendry, J., *see* Weatherup, R.N. et al.
 McLean, E., R.H. Devlin, J.C. Byatt, W.C. Clarke and E.M. Donaldson
 Impact of a controlled release formulation of recombinant bovine growth hormone upon
 growth and seawater adaptation in coho (*Oncorhynchus kisutch*) and chinook
 (*Oncorhynchus tshawytscha*) salmon 156 (1997) 113
 McManus, L.T., *see* Tumanda Jr., M.I. et al.
 Medina, A., Y. Vila, G. Mourente and A. Rodríguez
 A comparative study of the ovarian development in wild and pond-reared shrimp,
 Penaeus kerathurus (Forskål, 1775) 148 (1996) 63
 Meinertz, J.R., G.R. Stehly and W.H. Gingerich
 Pharmacokinetics of benzocaine in rainbow trout (*Oncorhynchus mykiss*) after intraarte-
 rial dosing 148 (1996) 39
 Méndez, J., *see* Martínez-Lage, A. et al.
 Méndez, L., B. Acosta, E. Palacios and F. Magallón
 Effect of stocking densities on trace metal concentration in three tissues of the brown
 shrimp *Penaeus californiensis* 156 (1997) 21
 Mensberg, K.-L.D., *see* Hansen, M.M. et al.
 Merchie, G., P. Lavens and P. Sorgeloos
 Optimization of dietary vitamin C in fish and crustacean larvae: a review 155 (1997) 165

- Merchie, G., P. Lavens, J. Verreth, F. Ollevier, H. Nelis, A. De Leenheer, V. Storch and P. Sorgeloos
The effect of supplemental ascorbic acid in enriched live food for *Clarias gariepinus* larvae at startfeeding 151 (1997) 245
- Merican, Z.O. and K.F. Shim
Quantitative requirements of linolenic and docosahexaenoic acid for juvenile *Penaeus monodon* 157 (1997) 277
- Merlin, A., *see* Barbaro, A. et al.
- Metcalfe, N.B., *see* Kadri, S. et al.
- Miao, H.-Z., *see* Tong, S.-L. et al.
- Midtlyng, P.J., *see* Lund, R.A. et al.
- Millamena, O.M. and A.T. Triño
Low-cost feed for *Penaeus monodon* reared in tanks and under semi-intensive and intensive conditions in brackishwater ponds. 154 (1997) 69
- Millamena, O.M., M.N. Bautista, O.S. Reyes and A. Kanazawa
Threonine requirement of juvenile marine shrimp *Penaeus monodon* 151 (1997) 9
- Millican, P.F., *see* Utting, S.D. et al.
- Mingmuang, M., *see* Thongpan, A. et al.
- Minkoff, G., *see* Verdonck, L. et al.
- Misamore, M. and C.L. Browdy
Evaluating hybridization potential between *Penaeus setiferus* and *Penaeus vannamei* through natural mating, artificial insemination and in vitro fertilization 150 (1997) 1
- Mitchell, B.D., *see* Austin, C.M. et al.
- Mohamed, S., *see* Habib, M.A.B. et al.
- Mohanty, A.N., *see* Kanaujia, D.R. et al.
- Mohanty, S.S., *see* Samantaray, K. et al.
- Mohney, L.L., R.R. Williams, T.A. Bell and D.V. Lightner
Residues of oxytetracycline in cultured juvenile blue shrimp, *Penaeus stylirostris* (Crustacea: Decapod), fed medicated feed for 14 days 149 (1997) 193
- Moksness, E. and R. Støle
Larviculture of marine fish for sea ranching purposes: is it profitable?. 155 (1997) 341
- Mongkonpunya, K., *see* Thongpan, A. et al.
- Monsalvo-Spencer, P., *see* Maeda-Martínez, A.N. et al.
- Montero, D., *see* Aksnes, A. et al.
- Montero, D., *see* Fernández-Palacios, H. et al.
- Montero, D., *see* Robaina, L. et al.
- Morales, R., *see* Maeda-Martínez, A.N. et al.
- Moreno, M.A., *see* Doménech, A. et al.
- Moriarty, D.J.W.
The role of microorganisms in aquaculture ponds. 151 (1997) 333
- Mortensen, A., *see* Eggset, G. et al.
- Mourente, G., *see* Medina, A. et al.
- Mourente, G., *see* Tocher, D.R. et al.
- Mowlah, G., *see* Hasan, M.R. et al.
- Moyano, F.J., *see* Robaina, L. et al.
- Mundheim, H., *see* Aksnes, A. et al.
- Munuswamy, N., *see* Hagiwara, A. et al.
- Mylonas, C.C., A. Gissis, Y. Magnus and Y. Zohar
Hormonal changes in male white bass (*Morone chrysops*) and evaluation of milt quality after treatment with a sustained-release GnRH α delivery system 153 (1997) 301
- Naessens, E., P. Lavens, L. Gomez, C.L. Browdy, K. McGovern-Hopkins, A.W. Spencer, D. Kawahigashi and P. Sorgeloos
Maturation performance of *Penaeus vannamei* co-fed *Artemia* biomass preparations . . 155 (1997) 87

- Nahar, F., *see* Mazid, M.A. et al.
 Nahar, N., *see* Hossain, M.A. et al.
 Nakagawa, H., T. Umino and Y. Tasaka
 Usefulness of *Ascophyllum* meal as a feed additive for red sea bream, *Pagrus major* . . . 151 (1997) 275
 Nakagawa, H., *see* Umino, T. et al.
 Nakata, K., *see* Uchida, M. et al.
 Navarrete del Toro, M.A., *see* Serviere-Zaragoza, E. et al.
 Navarro, L., *see* Olvera-Novoa, M.A. et al.
 Navas, J.M., *see* Bell, J.G. et al.
 Nelis, H., *see* Merchie, G. et al.
 Ng, W.-K., G. Serrini, Z. Zhang and R.P. Wilson
 Niacin requirement and inability of tryptophan to act as a precursor of NAD⁺ in channel catfish, *Ictalurus punctatus* 152 (1997) 273
 NicGabhainn, S., *see* Kerry, J. et al.
 Nielsen, M.E., *see* Buchmann, K. et al.
 Nilsson, A., *see* Troell, Max. et al.
 Noble, A.C., *see* Bullock, G.L. et al.
 Nordmo, R., S. Sevatdal and A. Ramstad
 Experimental infection with *Vibrio salmonicida* in Atlantic salmon (*Salmo salar* L.): an evaluation of three different challenge methods 158 (1997) 23
 Nordrum, S., T. Åsgård, K.D. Shearer and P. Arnesen
 Availability of phosphorus in fish bone meal and inorganic salts to Atlantic salmon (*Salmo salar*) as determined by retention 157 (1997) 51
 Norsker, N.H., *see* Støttrup, J.G. et al.
 Northam, M., *see* Gardner, C. et al.
 Notter, D.R., *see* Bosworth, B.G. et al.
 Nunes, A.J.P., T.C.V. Gesteira and S. Goddard
 Food ingestion and assimilation by the Southern brown shrimp *Penaeus subtilis* under semi-intensive culture in NE Brazil 149 (1997) 121
 Nussinovitch, A., *see* Van Rijn, J. et al.
 O'Connor, W.A. and M.P. Heasman
 Diet and feeding regimens for larval doughboy scallops, *Mimachlamys asperima* 158 (1997) 289
 Ohta, H. and H. Tanaka
 Relationship between serum levels of human chorionic gonadotropin (hCG) and 11-keto-testosterone after a single injection of hCG and induced maturity in the male Japanese eel, *Anguilla japonica* 153 (1997) 123
 Øie, G., P. Makridis, K.I. Reitan and Y. Olsen
 Protein and carbon utilization of rotifers (*Brachionus plicatilis*) in first feeding of turbot larvae (*Scophthalmus maximus* L.) 153 (1997) 103
 Øie, G., *see* Reitan, K.I. et al.
 Oliveira, E.C., *see* Alveal, K. et al.
 Olivera-Castillo, L., *see* Olvera-Novoa, M.A. et al.
 Ollevier, F., *see* Beullens, K. et al.
 Ollevier, F., *see* Beullens, K. et al.
 Ollevier, F., *see* Grisez, L. et al.
 Ollevier, F., *see* Merchie, G. et al.
 Ollevier, F., *see* Verdonck, L. et al.
 Olli, J.J., *see* Bjerkeng, B. et al.
 Olling, M., *see* Iosifidou, E.G. et al.
 Olsen, Y., *see* Øie, G. et al.
 Olsen, Y., *see* Evjemo, J.O. et al.
 Olsen, Y., *see* Rainuzzo, J.R. et al.
 Olsen, Y., *see* Reitan, K.I. et al.

- Olvera-Novoa, M.A., F. Pereira-Pacheco, L. Olivera-Castillo, V. Pérez-Flores, L. Navarro and J.C. Sámano
Cowpea (*Vigna unguiculata*) protein concentrate as replacement for fish meal in diets for tilapia (*Oreochromis niloticus*) fry. 158 (1997) 107
- Oran, G., see Koumoundouros, G. et al.
- Osse, J.W.M., J.G.M. Van den Boogaart, G.M.J. Van Snik and L. Van der Sluys
Priorities during early growth of fish larvae 155 (1997) 249
- Otta, S.K., see Karunasagar, I. et al.
- Owens, L., see Edgerton, B. et al.
- Pagador, R.R., see Tan-Fermin, J.D. et al.
- Palacios, E., see Méndez, L. et al.
- Palti, Y., J.E. Parsons and G.H. Thorgaard
Assessment of genetic variability among strains of rainbow and cutthroat trout using multilocus DNA fingerprints 149 (1997) 47
- Pandey, N. and W.S. Lakra
Evidence of female heterogamety, B-chromosome and natural tetraploidy in the Asian catfish, *Clarias batrachus*, used in aquaculture 149 (1997) 31
- Papandroulakis, N., see Divanach, P. et al.
- Papapanagiotou, E., see Bakopoulos, V. et al.
- Park, M.T., see Henderson, R.J. et al.
- Parsons, J.E., see Palti, Y. et al.
- Patiño-Suárez, V., see Aldana-Aranda, D. et al.
- Pavlidis, M., see Rotllant, J. et al.
- Pazos, A.J., see Jara-Jara, R. et al.
- Pedersen, B.H.
The cost of growth in young fish larvae, a review of new hypotheses 155 (1997) 259
- Pedersen, K., see Buchmann, K. et al.
- Pekarsky, I., see Lubzens, E. et al.
- Pereira-Pacheco, F., see Olvera-Novoa, M.A. et al.
- Perera, R.P., S.K. Johnson and D.H. Lewis
Epizootiological aspects of *Streptococcus iniae* affecting tilapia in Texas 152 (1997) 25
- Pérez-Camacho, A., see Albentosa, M. et al.
- Pérez-Flores, V., see Olvera-Novoa, M.A. et al.
- Pérez, J.A., see Rodríguez, C. et al.
- Pérez, L., H. Gonzalez, M. Jover and J. Fernández-Carmona
Growth of European sea bass fingerlings (*Dicentrarchus labrax*) fed extruded diets containing varying levels of protein, lipid and carbohydrate 156 (1997) 183
- Pérez-Camacho, A., see Albentosa, M. et al.
- Perschbacher, P.W., N. Stone, G.M. Ludwig and C.B. Guy Jr.
Evaluation of effects of common aerially-applied soybean herbicides and propanil on the plankton communities of aquaculture ponds. 157 (1997) 117
- Person-Le Ruyet, J., R. Galland, A. Le Roux and H. Chartois
Chronic ammonia toxicity in juvenile turbot (*Scophthalmus maximus*) 154 (1997) 155
- Peyraud, C., see Seddiki, H. et al.
- Phang, S.M., see Habib, M.A.B. et al.
- Phelps, R.P., see Al-ablani, S.A. et al.
- Phromkunthong, W., M. Boonyaratpalin and V. Storch
Different concentrations of ascorbyl-2-monophosphate-magnesium as dietary sources of vitamin C for seabass, *Lates calcarifer* 151 (1997) 225
- Piferrer, F., see Felip, A. et al.
- Piironen, J., see Elo, K. et al.
- Pillinger, J.M., see Cooper, J.A. et al.
- Pirhonen, J., see Koskela, J. et al.
- Pittman, K.A., see Haroon, A.K.Y. et al.

- Po, H., *see* Wang, J.-Q. et al.
- Podoskin, A.G., *see* Podoskina, T.A. et al.
- Podoskina, T.A., A.G. Podoskin and E.N. Bekina
Efficiency of utilization of some potato starch modifications by rainbow trout (*Oncorhynchus mykiss*) 152 (1997) 235
- Ponce-Palafox, J., C.A. Martinez-Palacios and L.G. Ross
The effects of salinity and temperature on the growth and survival rates of juvenile white shrimp, *Penaeus vannamei*, Boone, 1931 157 (1997) 107
- Popper, D., *see* Goldan, O. et al.
- Popper, D.M., *see* Hassin, S. et al.
- Poppi, D., *see* Buchanan, J. et al.
- Pouemegne, J.-B., *see* Pouomogne, V. et al.
- Pouomogne, V., G. Takam and J.-B. Pouemegne
A preliminary evaluation of cacao husks in practical diets for juvenile Nile tilapia (*Oreochromis niloticus*) 156 (1997) 211
- Powell, E.N., *see* Kobayashi, M. et al.
- Pursell, L., *see* Bent Samuelsen, O. et al.
- Qin, J., A.W. Fast, D. DeAnda and R.P. Weidenbach
Growth and survival of larval snakehead (*Channa striatus*) fed different diets 148 (1997) 105
- Quazuguel, P., *see* Gatesoupe, F.-J. et al.
- Rach, J.J., G.E. Howe and T.M. Schreier
Safety of formalin treatments on warm- and coolwater fish eggs 149 (1997) 183
- Rae, G.H., *see* Davies, I.M. et al.
- Rahkonen, R., M. Salminen and E. Erkamo
Comparison of the marine survival of Atlantic salmon, *Salmo salar* L. smolts vaccinated and nonvaccinated against vibriosis 156 (1997) 349
- Rainuzzo, J.R., K.I. Reitan and Y. Olsen
The significance of lipids at early stages of marine fish: a review 155 (1997) 103
- Rainuzzo, J.R., *see* Reitan, K.I. et al.
- Ramofafia, C., T.P. Foyle and J.D. Bell
Growth of juvenile *Actinopyga mauritiana* (Holothuroidea) in captivity. 152 (1997) 119
- Ramos, J., *see* Felip, A. et al.
- Ramstad, A., *see* Nordmo, R. et al.
- Rangdale, R.E., R.H. Richards and D.J. Alderman
Minimum inhibitory concentrations of selected antimicrobial compounds against *Flavobacterium psychrophilum* the causal agent of rainbow trout fry syndrome (RTFS) 158 (1997) 193
- Rasmussen, G., *see* Hansen, M.M. et al.
- Rata, P., *see* Henttonen, P. et al.
- Refstie, S., S.J. Helland and T. Storebakken
Adaptation to soybean meal in diets for rainbow trout, *Oncorhynchus mykiss* 153 (1997) 263
- Refstie, S., *see* Bjerkeng, B. et al.
- Refstie, T., *see* GjØen, H.M. et al.
- Reitan, K.I., J.R. Rainuzzo, G. Øie and Y. Olsen
A review of the nutritional effects of algae in marine fish larvae 155 (1997) 207
- Reitan, K.I., *see* Øie, G. et al.
- Reitan, K.I., *see* Rainuzzo, J.R. et al.
- Retamales, C.A., *see* Buschmann, A.H. et al.
- Reyes, O.S., *see* Millamena, O.M. et al.
- Reyniers, J., *see* Grisez, L. et al.
- Reynoso-Granados, T., *see* Maeda-Martínez, A.N. et al.
- Ribble, C., *see* St-Hilaire, S. et al.
- Rice, D., *see* Weatherup, R.N. et al.
- Richards, R., *see* Bakopoulos, V. et al.

- Richards, R.H., *see* Alexis, M.N. et al.
- Richards, R.H., *see* Rangdale, R.E. et al.
- Richter, C.J.J., *see* Beullens, K. et al.
- Richter, C.J.J., *see* Beullens, K. et al.
- Richter, C.J.J., *see* Bongers, A.B.J. et al.
- Richter, C.J.J., *see* Bongers, A.B.J. et al.
- Ridge, I., *see* Cooper, J.A. et al.
- Riise, J.C. and N. Roos
 - Benthic metabolism and the effects of bioturbation in a fertilised polyculture fish pond in northeast Thailand 150 (1997) 45
- Rintamäki-Kinnunen, P., J.-F. Bernardet and A. Bloigu
 - Yellow pigmented filamentous bacteria connected with farmed salmonid fish mortality 149 (1997) 1
- Riquelme, C., R. Araya, N. Vergara, A. Rojas, M. Guaita and M. Candia
 - Potential probiotic strains in the culture of the Chilean scallop *Argopecten purpuratus* (Lamarck, 1819) 154 (1997) 17
- Rittibonbhun, N., *see* Chiayvareesajja, S. et al.
- Robaina, L., F.J. Moyano, M.S. Izquierdo, J. Socorro, J.M. Vergara and D. Montero
 - Corn gluten and meat and bone meals as protein sources in diets for gilthead seabream (*Sparus aurata*): Nutritional and histological implications 157 (1997) 347
- Robaina, L., *see* Aksnes, A. et al.
- Robaina, L., *see* Fernández-Palacios, H. et al.
- Roberts, Jr., D.E., *see* Tucker, Jr., J.W. et al.
- Rødbotten, M., *see* Bjerkeng, B. et al.
- Rodríguez, A., *see* Medina, A. et al.
- Rodríguez, C., J.A. Pérez, M. Díaz, M.S. Izquierdo, H. Fernández-Palacios and A. Lorenzo
 - Influence of the EPA/DHA ratio in rotifers on gilthead seabream (*Sparus aurata*) larval development 150 (1997) 77
- Roem, A.J., *see* Bjerkeng, B. et al.
- Rojas, A., *see* Riquelme, C. et al.
- Romo, H., *see* Alveal, K. et al.
- Rønnestad, I., Ø. Lie and R. Waagbø
 - Vitamin B₆ in Atlantic halibut, *Hippoglossus hippoglossus*—endogenous utilization and retention in larvae fed natural zooplankton 157 (1997) 337
- Roos, N., *see* Riise, J.C. et al.
- Rosas, C., A. Sánchez, E. Díaz-Iglesia, R. Brito, E. Martinez and L.A. Soto
 - Critical dissolved oxygen level to *Penaeus setiferus* and *Penaeus schmitti* postlarvae (PL₁₀₋₁₈) exposed to salinity changes 152 (1997) 259
- Rose, R.A., *see* Taylor, J.J. et al.
- Rose, R.A., *see* Taylor, J.J. et al.
- Rosenlund, G., J. Stoss and C. Talbot
 - Co-feeding marine fish larvae with inert and live diets 155 (1997) 183
- Ross, L.G., *see* Ponce-Palafox, J. et al.
- Rotllant, J., M. Pavlidis, M. Kentouri, M.E. Abad and L. Tort
 - Non-specific immune responses in the red porgy *Pagrus pagrus* after crowding stress 156 (1997) 279
- Ruchimat, T., T. Masumoto, H. Hosokawa and S. Shimeno
 - Quantitative methionine requirement of yellowtail (*Seriola quinqueradiata*) 150 (1997) 113
- Ruchimat, T., T. Masumoto, H. Hosokawa, Y. Itoh and S. Shimeno
 - Quantitative lysine requirement of yellowtail (*Seriola quinqueradiata*) 158 (1997) 331
- Rye, M., *see* Lein, I. et al.
- Sagi, A., R. Shoukrun, T. Levy, A. Barki, G. Hulata and I. Karplus
 - Reproduction and molt in previously spawned and first-time spawning red-claw crayfish *Cherax quadricarinatus* females following eyestalk ablation during the winter reproductive-arrest period 156 (1997) 101
- Sakai, M., *see* Kawakami, H. et al.

- Salhi, M., *see* Fernández-Palacios, H. et al.
- Salminen, M., *see* Rahkonen, R. et al.
- Sámano, J.C., *see* Olvera-Novoa, M.A. et al.
- Samantaray, K. and S.S. Mohanty
Interactions of dietary levels of protein and energy on fingerling snakehead, *Channa striata* 156 (1997) 241
- Samuelsen, O.B. and A. Ervik
Single dose pharmacokinetic study of flumequine after intravenous, intraperitoneal and oral administration to Atlantic halibut (*Hippoglossus hippoglossus*) held in seawater at 9°C 158 (1997) 215
- Sánchez, A., *see* Rosas, C. et al.
- Sánchez, J.L., *see* Jara-Jara, R. et al.
- Sarà, G. and A. Mazzola
Effects of trophic and environmental conditions on the growth of *Crassostrea gigas* in culture 153 (1997) 81
- Sarac, H.Z., *see* Buchanan, J. et al.
- Sargent, J.R., L.A. McEvoy and J.G. Bell
Requirements, presentation and sources of polyunsaturated fatty acids in marine fish larval feeds 155 (1997) 117
- Sargent, J.R., *see* Koven, W.M. et al.
- Sargent, J.R., *see* Tocher, D.R. et al.
- Satoh, S., *see* Watanabe, T. et al.
- Schreier, T.M., *see* Rach, J.J. et al.
- Schuhmacher, A., C. Wax and J.M. Gropp
Plasma amino acids in rainbow trout (*Oncorhynchus mykiss*) fed intact protein or a crystalline amino acid diet 151 (1997) 15
- Scott, T. and B.G. Foster
Salmonella spp. in free-ranging and farmed alligators (*Alligator mississippiensis*) from Texas and Louisiana, U.S.A. 156 (1997) 179
- Seddiki, H., G. Boeuf, V. Maxime and C. Peyraud
Effects of growth hormone treatment on oxygen consumption and sea water adaptability in Atlantic salmon parr and pre-smolts 148 (1996) 49
- Sedlacek, J.D., *see* Tidwell, J.H. et al.
- Seeb, L.W., *see* Fetzner Jr., J.W. et al.
- Segovia, E., *see* Maeda-Martínez, A.N. et al.
- Seland, A., *see* Erikson, U. et al.
- Seronay, G.A., *see* Fermin, A.C. et al.
- Serrini, G., *see* Ng, W.-K. et al.
- Serviere-Zaragoza, E., M.A. Navarrete del Toro and F.L. García-Carreño
Protein-hydrolyzing enzymes in the digestive systems of the adult Mexican blue abalone, *Haliotis fulgens* (Gastropoda) 157 (1997) 325
- Sevatdal, S., *see* Nordmo, R. et al.
- Shansudin, L., M. Yusof, A. Azis and Y. Shukri
The potential of certain indigenous copepod species as live food for commercial fish larval rearing 151 (1997) 351
- Shearer, K.D., J.T. Silverstein and W.W. Dickhoff
Control of growth and adiposity of juvenile chinook salmon (*Oncorhynchus tshawytscha*). 157 (1997) 311
- Shearer, K.D., *see* Nordrum, S. et al.
- Sheehan, R.J., *see* Fetzner Jr., J.W. et al.
- Sheikh-Eldin, M., S.S. De Silva and B.A. Ingram
Effects of diets and feeding rate on the survival and growth of Macquarie perch (*Macquaria australasica*) larvae, a threatened Australian native fish 157 (1997) 35
- Sheridan, A.K.
Genetic improvement of oyster production—a critique 153 (1997) 165

- Shiau, S.-Y., *see* Lin, J.-H. et al.
- Shiau, S.Y.
 - Utilization of carbohydrates in warmwater fish—with particular reference to tilapia, *Oreochromis niloticus* × *O. aureus* 151 (1997) 79
- Shields, R.J., N.P. Brown and N.R. Bromage
 - Blastomere morphology as a predictive measure of fish egg viability 155 (1997) 1
- Shikata, T., *see* Shimeno, S. et al.
- Shim, K.F., *see* Elangovan, A. et al.
- Shim, K.F., *see* Gunasekera, R.M. et al.
- Shim, K.F., *see* Merican, Z.O. et al.
- Shimeno, S., T. Shikata, H. Hosokawa, T. Masumoto and D. Kheyyali
 - Metabolic response to feeding rates in common carp, *Cyprinus carpio* 151 (1997) 371
- Shimeno, S., *see* Ruchimat, T. et al.
- Shimeno, S., *see* Ruchimat, T. et al.
- Shinohara, N., *see* Kawakami, H. et al.
- Shoemaker, C.A., *see* Klesius, P.H. et al.
- Shoukrun, R., *see* Sagi, A. et al.
- Shpigel, M., A. Gasith and E. Kimmel
 - A biomechanical filter for treating fish-pond effluents 152 (1997) 103
- Shrem, A., *see* Barki, A. et al.
- Shukri, Y., *see* Shansudin, L. et al.
- Sicard, M.T., *see* Maeda-Martínez, A.N. et al.
- Sigholt, T., *see* Erikson, U. et al.
- Silverstein, J.T., *see* Shearer, K.D. et al.
- Simonsen, V., *see* Hansen, M.M. et al.
- Simpson, A.L. and J.E. Thorpe
 - Evidence for adaptive matching of appetite in juvenile Atlantic salmon (*Salmo salar*) with regular seasonal rhythms of food availability 151 (1997) 411
- Sin, Y.M., *see* He, J. et al.
- Sin, Y.M., *see* Leung, K.Y. et al.
- Skonberg, D.I., L. Yogev, R.W. Hardy and F.M. Dong
 - Metabolic response to dietary phosphorus intake in rainbow trout (*Oncorhynchus mykiss*) 157 (1997) 11
- Smith, P., *see* Bent Samuelsen, O. et al.
- Smith, P., *see* Coyne, R. et al.
- Smith, P., *see* Kerry, J. et al.
- Socorro, J., *see* Robaina, L. et al.
- Söderhäll, K., *see* Lilley, J.H. et al.
- Sommer, A.-I., *see* Eggset, G. et al.
- Sorgeloos, P., *see* Coutteau, P. et al.
- Sorgeloos, P., *see* Evjemo, J.O. et al.
- Sorgeloos, P., *see* Kontara, E.K.M. et al.
- Sorgeloos, P., *see* Merchie, G. et al.
- Sorgeloos, P., *see* Merchie, G. et al.
- Sorgeloos, P., *see* Naessens, E. et al.
- Sorgeloos, P., *see* Verdonck, L. et al.
- Soto, L.A., *see* Rosas, C. et al.
- Southgate, P.C., *see* Knauer, J. et al.
- Southgate, P.C., *see* Knauer, J. et al.
- Southgate, P.C., *see* Taylor, J.J. et al.
- Southgate, P.C., *see* Taylor, J.J. et al.
- Spencer, A.W., *see* Naessens, E. et al.

- St-Hilaire, S., C. Ribble, D.J. Whitaker and M.L. Kent
 Evaluation of a nondestructive diagnostic test for *Kudoa thyrsites* in farmed Atlantic salmon (*Salmo salar*) 156 (1997) 139
- Stagnitti, F., *see* Austin, C.M. et al.
- Stefanakis, S., *see* Koumoundouros, G. et al.
- Steffens, W.
 Effects of variation in essential fatty acids in fish feeds on nutritive value of freshwater fish for humans 151 (1997) 97
- Stehly, G.R., *see* Meinertz, J.R. et al.
- Stigebrandt, A., *see* Ervik, A. et al.
- Støle, R., *see* Moksness, E. et al.
- Stone, N., *see* Perschbacher, P.W. et al.
- Storch, V., *see* Merchie, G. et al.
- Storch, V., *see* Phromkunthong, W. et al.
- Storebakken, T., *see* Aas, G.H. et al.
- Storebakken, T., *see* Bjerkeng, B. et al.
- Storebakken, T., *see* Bjerkeng, B. et al.
- Storebakken, T., *see* Hung, S.S.O. et al.
- Storebakken, T., *see* Refstie, S. et al.
- Stoss, J., *see* Rosenlund, G. et al.
- Støttrup, J.G. and N.H. Norsker
 Production and use of copepods in marine fish larviculture. 155 (1997) 231
- Stratholt, M.L., E.M. Donaldson and N.R. Liley
 Stress induced elevation of plasma cortisol in adult female coho salmon (*Oncorhynchus kisutch*), is reflected in egg cortisol content, but does not appear to affect early development 158 (1997) 141
- Su, G.-S., L.-E. Liljedahl and G.A.E. Gall
 Genetic and environmental variation of female reproductive traits in rainbow trout (*Oncorhynchus mykiss*) 154 (1997) 115
- Su, M.-S., *see* Lee, C.-S. et al.
- Subosa, P.F., *see* Bautista, M.N. et al.
- Summerfelt, S.T., J.A. Hankins, A.L. Weber and M.D. Durant
 Ozonation of a recirculating rainbow trout culture system. II. Effects on microscreen filtration and water quality 158 (1997) 57
- Summerfelt, S.T., *see* Bullock, G.L. et al.
- Sweetman, E., *see* Verdonck, L. et al.
- Swings, J., *see* Grisez, L. et al.
- Swings, J., *see* Verdonck, L. et al.
- Tacon, A.G.J. and S.S. De Silva
 Feed preparation and feed management strategies within semi-intensive fish farming systems in the tropics 151 (1997) 379
- Takam, G., *see* Pouomogne, V. et al.
- Takami, H., T. Kawamura and Y. Yamashita
 Survival and growth rates of post-larval abalone *Haliotis discus hannai* fed conspecific trail mucus and/or benthic diatom *Cocconeis scutellum* var. *parva* 152 (1997) 129
- Takeuchi, T., *see* Chatzifotis, S. et al.
- Talbot, C., *see* Rosenlund, G. et al.
- Tan-Fermin, J.D., R.R. Pagador and R.C. Chavez
 LHRHa and pimozone-induced spawning of Asian catfish *Clarias macrocephalus* (Gunther) at different times during an annual reproductive cycle. 148 (1997) 323
- Tanaka, H., *see* Ohta, H. et al.
- Tanck, M.W.T., *see* Iosifidou, E.G. et al.
- Tandler, A., *see* Kolkovski, S. et al.
- Tandler, A., *see* Kolkovski, S. et al.

- Targett, N.M., *see* Boettcher, A.A. et al.
- Tartari, E., *see* Guarda, F. et al.
- Tasaka, Y., *see* Nakagawa, H. et al.
- Taylor, C.E., *see* Taylor, J.J. et al.
- Taylor, J.J., P.C. Southgate and R.A. Rose
Fouling animals and their effect on the growth of silver-lip pearl oysters, *Pinctada maxima* (Jameson) in suspended culture 153 (1997) 31
- Taylor, J.J., R.A. Rose, P.C. Southgate and C.E. Taylor
Effects of stocking density on growth and survival of early juvenile silver-lip pearl oysters, *Pinctada maxima* (Jameson), held in suspended nursery culture 153 (1997) 41
- Teshima, S.-i., *see* Giri, I.N.A. et al.
- Thinchant, S., *see* Thongpan, A. et al.
- Thongpan, A., M. Mingmuang, S. Thinchant, R. Cooper, T. Tiersch and K. Mongkonpunya
Genomic identification of catfish species by polymerase chain reaction and restriction enzyme analysis of the gene encoding the immunoglobulin M heavy chain constant region 156 (1997) 129
- Thorgaard, G.H., *see* Palti, Y. et al.
- Thorpe, J.E., *see* Kadri, S. et al.
- Thorpe, J.E., *see* Simpson, A.L. et al.
- Tidwell, J.H., S.D. Coyle, C.D. Webster, J.D. Sedlacek, P.A. Weston, W.L. Knight, S.J. Hill Jr., L.R. D'Abramo, W.H. Daniels and M.J. Fuller
Relative prawn production and benthic macroinvertebrate densities in unfed, organically fertilized, and fed pond systems 149 (1997) 227
- Tidwell, J.H., *see* Webster, C.D. et al.
- Tiersch, T., *see* Thongpan, A. et al.
- Tiu, L.G., *see* Webster, C.D. et al.
- Tocher, D.R., G. Mourente and J.R. Sargent
The use of silages prepared from fish neural tissues as enrichers for rotifers (*Brachionus plicatilis*) and *Artemia* in the nutrition of larval marine fish 148 (1997) 213
- Tong, S.-L., H. Li and H.-Z. Miao
The establishment and partial characterization of a continuous fish cell line FG-9307 from the gill of flounder *Paralichthys olivaceus* 156 (1997) 327
- Torrissen, O.J., *see* Christiansen, R. et al.
- Tort, L., *see* Rotllant, J. et al.
- Toth, G.P., A. Ciereszko, S.A. Christ and K. Dabrowski
Objective analysis of sperm motility in the lake sturgeon, *Acipenser fulvescens*: activation and inhibition conditions 154 (1997) 337
- Treasurer, J.W. and A. Grant
The efficacy of hydrogen peroxide for the treatment of farmed Atlantic salmon, *Salmo salar* L. infested with sea lice (Copepoda: Caligidae) 148 (1997) 265
- Triño, A.T., *see* Millamena, O.M. et al.
- Tripathi, S.D., *see* Kanaujia, D.R. et al.
- Troell, Max., C. Halling, A. Nilsson, A.H. Buschmann, N. Kautsky and L. Kautsky
Integrated marine cultivation of *Gracilaria chilensis* (Gracilariales, Rhodophyta) and salmon cages for reduced environmental impact and increased economic output . . . 156 (1997) 45
- Trott, L., *see* Benzie, J.A.H. et al.
- Tucker, Jr., J.W., W.A. Lellis, G.K. Vermeer, D.E. Roberts, Jr. and P.N. Woodward
The effects of experimental starter diets with different levels of soybean or menhaden oil on red drum (*Sciaenops ocellatus*). 149 (1997) 323
- Tumanda Jr., M.I., H.T. Yap, L.T. McManus, J.A. Ingles and M.G. López
Growth, mortality and recruitment pattern of the brown mussel, *Modiolus metcalfei* (Bivalvia: Mytilacea), in Panguil Bay, Southern Philippines 154 (1997) 233
- Tveite, S., *see* Lein, I. et al.

- Uchida, M., K. Nakata and M. Maeda
Introduction of detrital food webs into an aquaculture system by supplying single cell algal detritus produced from *Laminaria japonica* as a hatchery diet for *Artemia* nauplii 154 (1997) 125
- Ueno, R., *see* Uno, K. et al.
- Uldal, A., *see* Buchmann, K. et al.
- Ulla, O., *see* GjØen, H.M. et al.
- Umino, T., K. Arai and H. Nakagawa
Growth performance in clonal crucian carp, *Carassius langsdorfii*. Effects of genetic difference and feeding history 155 (1997) 271
- Umino, T., *see* Nakagawa, H. et al.
- Uno, K., T. Aoki, R. Ueno and I. Maeda
Pharmacokinetics and metabolism of sulphamonomethoxine in rainbow trout (*Oncorhynchus mykiss*) and yellowtail (*Seriola quinqueradiata*) following bolus intravascular administration 153 (1997) 1
- Utting, S.D. and P.F. Millican
Techniques for the hatchery conditioning of bivalve broodstocks and the subsequent effect on egg quality and larval viability 155 (1997) 45
- Vadstein, O.
The use of immunostimulation in marine larviculture: possibilities and challenges 155 (1997) 401
- Valencia, A., *see* Fernández-Palacios, H. et al.
- Van den Boogaart, J.G.M., *see* Osse, J.W.M. et al.
- Van der Sluys, L., *see* Osse, J.W.M. et al.
- Van Rijn, J. and A. Nussinovitch
An empirical model for predicting degradation of organic solids in fish culture systems based on short-term observations 154 (1997) 173
- Van Snik, G.M.J., *see* Osse, J.W.M. et al.
- Van Stokkom, A.C., *see* Bongers, A.B.J. et al.
- Verdonck, L., L. Grisez, E. Sweetman, G. Minkoff, P. Sorgeloos, F. Ollevier and J. Swings
Vibrios associated with routine productions of *Brachionus plicatilis* 149 (1997) 203
- Verdonck, L., *see* Grisez, L. et al.
- Vereivalu, T., *see* Macaranas, J.M. et al.
- Vergara, J.M., *see* Aksnes, A. et al.
- Vergara, J.M., *see* Robaina, L. et al.
- Vergara, N., *see* Riquelme, C. et al.
- Vermeer, G.K., *see* Tucker, Jr., J.W. et al.
- Verreth, J., *see* Merchie, G. et al.
- Vila, Y., *see* Medina, A. et al.
- Vinatea, L. and E.R. Andreatta
Comparative study of continuous and static water renewal strategies in the larviculture of *Penaeus paulensis* (Pérez Farfante, 1967) associated with high stocking densities and different water renewal rates 154 (1997) 247
- Volkman, J.K., *see* Brown, M.R. et al.
- Volpatti, D., *see* Bakopoulos, V. et al.
- Volpatti, D., *see* Jeney, G. et al.
- Voorthuis, P.K., *see* Bongers, A.B.J. et al.
- Vuorinen, J.A., *see* Elo, K. et al.
- Waagbø, R., *see* Rønnestad, I. et al.
- Wagner, U., *see* Hädige, D. et al.
- Wang, C. and R.T. Lovell
Organic selenium sources, selenomethionine and selenoyeast, have higher bioavailability than an inorganic selenium source, sodium selenite, in diets for channel catfish (*Ictalurus punctatus*). 152 (1997) 223

- Wang, J.-Q., H. Lui, H. Po and L. Fan
Influence of salinity on food consumption, growth and energy conversion efficiency of
common carp (*Cyprinus carpio*) fingerlings. 148 (1997) 115
- Wängberg, S.Å., *see* Berntsson, K.M. et al.
- Ward, F.J., *see* Hengsawat, K. et al.
- Watanabe, T., V. Kiron and S. Satoh
Trace minerals in fish nutrition 151 (1997) 185
- Wax, C., *see* Schuhmacher, A. et al.
- Weatherup, R.N., K.J. McCracken, R. Foy, D. Rice, J. McKendry, R.J. Mairs and R. Hoey
The effects of dietary fat content on performance and body composition of farmed
rainbow trout (*Oncorhynchus mykiss*) 151 (1997) 173
- Weber, A.L., *see* Bullock, G.L. et al.
- Weber, A.L., *see* Summerfelt, S.T. et al.
- Webster, C.D., L.G. Tiu, J.H. Tidwell and J.M. Grizzle
Growth and body composition of channel catfish (*Ictalurus punctatus*) fed diets
containing various percentages of canola meal 150 (1997) 103
- Webster, C.D., *see* Tidwell, J.H. et al.
- Weidenbach, R.P., *see* Qin, J. et al.
- Werlinger, C., *see* Alveal, K. et al.
- Wesche, S.J., R.D. Adlard and J.N.A. Hooper
The first incidence of clionid sponges (Porifera) from the Sydney rock oyster *Saccostrea*
commercialis (Iredale and Roughley, 1933). 157 (1997) 173
- Weston, D.P., *see* Herwig, R.P. et al.
- Weston, P.A., *see* Tidwell, J.H. et al.
- Whitaker, D.J., *see* St-Hilaire, S. et al.
- Wiegertjes, G.F., *see* Bongers, A.B.J. et al.
- Williams, R.R., *see* Mohney, L.L. et al.
- Williot, P., *see* Gisbert, E. et al.
- Wilson, R.P., *see* Ng, W.-K. et al.
- Wiriyaichitra, P., *see* Chiayvareesajja, S. et al.
- Wiseman, D., *see* Brown, J.A. et al.
- Wolfus, G.M., D.K. Garcia and A. Alcivar-Warren
Application of the microsatellite technique for analyzing genetic diversity in shrimp
breeding programs 152 (1997) 35
- Wong, L.S., *see* Leung, K.Y. et al.
- Woodward, P.N., *see* Tucker, Jr., J.W. et al.
- Xie, S., Y. Cui, Y. Yang and J. Liu
Effect of body size on growth and energy budget of Nile tilapia, *Oreochromis niloticus* 157 (1997) 25
- Xie, S., Y. Cui, Y. Yang and J. Liu
Energy budget of Nile tilapia (*Oreochromis niloticus*) in relation to ration size 154 (1997) 57
- Xu, G., *see* He, J. et al.
- Yamashita, H., *see* Kawakami, H. et al.
- Yamashita, Y., *see* Takami, H. et al.
- Yang, Y., *see* Xie, S. et al.
- Yang, Y., *see* Xie, S. et al.
- Yap, H.T., *see* Tumanda Jr., M.I. et al.
- Yin, Z., *see* He, J. et al.
- Yogev, L., *see* Skonberg, D.I. et al.
- Yúfera, M., *see* Fernández-Díaz, C. et al.
- Yusefovich, F., *see* Lubzens, E. et al.
- Yusof, M., *see* Shansudin, L. et al.
- Yusoff, F.M., *see* Habib, M.A.B. et al.
- Zaher, M., *see* Mazid, M.A. et al.
- Zambonino Infante, J.-L., *see* Gatesoupe, F.-J. et al.

- Zambonino Infante, J.L., *see* Escaffre, A.M. et al.
Zandieh-Doulabi, B., *see* Bongers, A.B.J. et al.
Zandieh-Doulabi, B., *see* Bongers, A.B.J. et al.
Zanuy, S., *see* Felip, A. et al.
Zhang, Z., *see* Ng, W.-K. et al.
Zoccarato, I., *see* Guarda, F. et al.
Zohar, Y., *see* Hassin, S. et al.
Zohar, Y., *see* Mylonas, C.C. et al.

Subject index

Aquaculture, volumes 148 / 2–158, 1997

Abalone

Can crystalline arginine be used to quantify the arginine requirement of abalone?, 157 (1997) 95

Effect of dietary protein and energy level on growth and body composition of South African abalone, *Haliotis midae*, 156 (1997) 195

Effect of temperature on growth, feed consumption and nutritional indices of *Haliotis midae* fed a formulated diet, 152 (1997) 191

The role of bacteria in the digestion of seaweed by the abalone *Haliotis midae*, 155 (1997) 377

Absorption

Association of pulse chase design, compartmental analysis and analog modeling to assess absorption and assimilation efficiencies in *Penaeus stylirostris* fed an artificial diet, 149 (1997) 71

Accumulation

An empirical model for predicting degradation of organic solids in fish culture systems based on short-term observations, 154 (1997) 173

Acipenser baeri

Larval behaviour and effect of the timing of initial feeding on growth and survival of Siberian sturgeon (*Acipenser baeri*) larvae under small scale hatchery production, 156 (1997) 63

***Acipenser* spp.**

Effect of feeding strategy and carbohydrate source on carbohydrate utilization by white

sturgeon (*Acipenser transmontanus*) and hybrid tilapia (*Oreochromis niloticus* × *O. aureus*), 148 (1997) 201

Acipenser transmontanus

Spontaneous steatitis of epicardial fat in farmed white sturgeon (*Acipenser transmontanus*), 158 (1997) 167

Acquired immunity

Heterologous isolates challenge of channel catfish, *Ictalurus punctatus*, immune to *Edwardsiella ictaluri*, 157 (1997) 147

Actinopyga mauritiana

Growth of juvenile *Actinopyga mauritiana* (Holothuroidea) in captivity, 152 (1997) 119

Adaptation

Adaptation to soybean meal in diets for rainbow trout, *Oncorhynchus mykiss*, 153 (1997) 263

Adhesions

Post-vaccination intra-abdominal adhesions as a marker to identify Atlantic salmon, *Salmo salar* L., escaped from commercial fish farms, 154 (1997) 27

Adiposity

Control of growth and adiposity of juvenile chinook salmon (*Oncorhynchus tshawytscha*), 157 (1997) 311

Adult

Salmonella spp. in free-ranging and farmed alligators (*Alligator mississippiensis*) from Texas and Louisiana, U.S.A., 156 (1997) 179

Aeromonas hydrophila

Mini-Tn5 induced growth- and protease-deficient mutants of *Aeromonas hydrophila* as live vaccines for blue gourami, *Trichogaster trichopterus* (Pallas), 158 (1997) 11

***Aeromonas* isolates**

Characterization of core-oligosaccharide- and O-polysaccharide-specific monoclonal antibodies against *Aeromonas salmonicida* LPS binding to typical and atypical *Aeromonas salmonicida* isolates, 157 (1997) 157

Aeromonas salmonicida

Characterization of core-oligosaccharide- and O-polysaccharide-specific monoclonal antibodies against *Aeromonas salmonicida* LPS binding to typical and atypical *Aeromonas salmonicida* isolates, 157 (1997) 157

Susceptibility to furunculosis, cold water vibriosis, and infectious pancreatic necrosis (IPN) in post-smolt Atlantic salmon (*Salmo salar* L.) as a function of smolt status by seawater transfer, 158 (1997) 179

African catfish

The effect of stocking density on yield, growth and mortality of African catfish (*Clarias gariepinus* Burchell 1822) cultured in cages, 152 (1997) 67

Age

Influence of age on digestive enzyme activity in some freshwater teleosts, 148 (1996) 25

Seasonal and age variability in the reproductive performance of *Penaeus semisulcatus* broodstock: optimising broodstock selection, 155 (1997) 55

Algae

Diet and feeding regimens for larval doughboy scallops, *Mimachlamys asperrima*, 158 (1997) 289

Nutritional values of chironomid larvae grown in palm oil mill effluent and algal culture, 158 (1997) 95

Algae meal

Usefulness of *Ascophyllum* meal as a feed additive for red sea bream, *Pagrus major*, 151 (1997) 275

Algal diets

Evaluation of live microalgal diets for the seed culture of *Ruditapes decussatus* using physiological and biochemical parameters, 148 (1996) 11

Algal inhibition

Barley straw inhibits growth of some aquatic saprolegniaceous fungi, 156 (1997) 157

Alligator

Salmonella spp. in free-ranging and farmed alligators (*Alligator mississippiensis*) from Texas and Louisiana, U.S.A., 156 (1997) 179

Alligator mississippiensis

Salmonella spp. in free-ranging and farmed alligators (*Alligator mississippiensis*) from Texas and Louisiana, U.S.A., 156 (1997) 179

Alteromonas espejiana

Introduction of detrital food webs into an aquaculture system by supplying single cell algal detritus produced from *Laminaria japonica* as a hatchery diet for *Artemia* nauplii, 154 (1997) 125

17 α -methyltestosterone

Sex reversal in black crappie *Pomoxis nigromaculatus*: effect of oral administration of 17 α -methyltestosterone on two age classes, 158 (1997) 155

Amino acid

The effect of dietary protein and lipid from squid and fish meals on egg quality of broodstock for gilthead seabream (*Sparus aurata*), 148 (1997) 233

Amino acid composition

Influence of dietary protein content on the distribution of amino acids in oocytes, serum and muscle of Nile tilapia, *Oreochromis niloticus* (L.), 152 (1997) 205

Amino acid requirements

Re-evaluation of protein and amino acid requirements of rainbow trout (*Oncorhynchus mykiss*), 151 (1997) 3

Threonine requirement of juvenile marine shrimp *Penaeus monodon*, 151 (1997) 9

Amino acids

Can crystalline arginine be used to quantify the arginine requirement of abalone?, 157 (1997) 95

Identification of feed enhancers for juvenile largemouth bass *Micropterus salmoides*, 148 (1997) 191

Nutritional values of chironomid larvae grown in palm oil mill effluent and algal culture, 158 (1997) 95

Amino acid test diets

Plasma amino acids in rainbow trout (*Oncorhynchus mykiss*) fed intact protein or a crystalline amino acid diet, 151 (1997) 15

Ammonia

Chronic ammonia toxicity in juvenile turbot (*Scophthalmus maximus*), 154 (1997) 155

Ammonia-N excretion

Oxygen uptake and ammonia-N excretion of juvenile *Penaues japonicus* during depuration following one-day exposure to different concentrations of saponin at different salinity levels, 156 (1997) 77

Amylase

Nutritional value of soy protein concentrate for larvae of common carp (*Cyprinus carpio*) based on growth performance and digestive enzyme activities, 153 (1997) 63

Anaesthesia

Pharmacokinetics of benzocaine in rainbow trout (*Oncorhynchus mykiss*) after intraarterial dosing, 148 (1996) 39

Androgenesis

Distribution of genetic variance in gynogenetic or androgenetic families, 153 (1997) 225

Genomic identification of catfish species by polymerase chain reaction and restriction enzyme analysis of the gene encoding the immunoglobulin M heavy chain constant region, 156 (1997) 129

Androgens

Relationship between serum levels of human chorionic gonadotropin (hCG) and 11-keto-testosterone after a single injection of hCG and

induced maturity in the male Japanese eel, *Anguilla japonica*, 153 (1997) 123

Anguilla japonica

Relationship between serum levels of human chorionic gonadotropin (hCG) and 11-keto-testosterone after a single injection of hCG and induced maturity in the male Japanese eel, *Anguilla japonica*, 153 (1997) 123

Annual

LHRHa and pimozide-induced spawning of Asian catfish *Clarias macrocephalus* (Gunther) at different times during an annual reproductive cycle, 148 (1997) 323

Annual molting cycle

Annual cycle of spawning and molting in the red-claw crayfish, *Cherax quadricarinatus*, under laboratory conditions, 157 (1997) 239

Annual spawning cycle

Annual cycle of spawning and molting in the red-claw crayfish, *Cherax quadricarinatus*, under laboratory conditions, 157 (1997) 239

Anorexia

Anorexia in one-sea-winter Atlantic salmon (*Salmo salar*) during summer, associated with sexual maturation, 151 (1997) 405

Antibacterial activity

Multiple-dose pharmacokinetic study of Romet³⁰ in Atlantic salmon (*Salmo salar*) and in vitro antibacterial activity against *Aeromonas salmonicida*, 152 (1997) 13

Antibacterials

Antibacterial resistant bacteria in surficial sediments near salmon net-cage farms in Puget Sound, Washington, 149 (1997) 263

Microbial response to antibacterial treatment in marine microcosms, 152 (1997) 139

Antifouling

Biofouling of fish-cage netting: efficacy and problems of in situ cleaning, 152 (1997) 77

Antimicrobial susceptibility

Minimum inhibitory concentrations of selected antimicrobial compounds against *Flavobacterium psychrophilum* the causal agent of rainbow trout fry syndrome (RTFS), 158 (1997) 193

Aphanomyces astaci

RAPD evidence for the origin of crayfish plague outbreaks in Britain, 157 (1997) 181

Apparent digestibility, retention

Bioavailability of all-*E*-astaxanthin and *Z*-isomers of astaxanthin in rainbow trout (*Oncorhynchus mykiss*), 157 (1997) 63

Apparent SDA

Effect of feeding frequency, feeding level and temperature on energy metabolism in *Sparus aurata*, 148 (1997) 125

Appetite

Evidence for adaptive matching of appetite in juvenile Atlantic salmon (*Salmo salar*) with regular seasonal rhythms of food availability, 151 (1997) 411

Aquaculture

Age at first infection of *Cherax quadricarinatus* by *Cherax quadricarinatus* bacilliform virus and *Cherax* *Giardiavirus*-like virus, and production of putative virus-free crayfish, 152 (1997) 1

Antibacterial resistant bacteria in surficial sediments near salmon net-cage farms in Puget Sound, Washington, 149 (1997) 263

Effect of dietary protein and energy level on growth and body composition of South African abalone, *Haliotis midae*, 156 (1997) 195

Growth of juvenile *Actinopyga mauritiana* (Holothuroidea) in captivity, 152 (1997) 119

Impact of a controlled release formulation of recombinant bovine growth hormone upon growth and seawater adaptation in coho (*Oncorhynchus kisutch*) and chinook (*Oncorhynchus tshawytscha*) salmon, 156 (1997) 113

Influence of explant procedures and environmental factors on culture success of three sponges, 156 (1997) 251

Response of the yabby, *Cherax destructor* Clark, to natural and artificial diets: phenotypic variation in juvenile growth, 149 (1997) 39

Spawning and larval husbandry of flounder (*Paralichthys woolmani*) and Pacific yellowtail

(*Seriola mazatlanensis*), new candidate species for aquaculture, 155 (1997) 307

Aquaculture potential

Pond production of pellet-fed advanced juvenile and food-size largemouth bass, 149 (1997) 253

Aquatic fungi

Barley straw inhibits growth of some aquatic saprolegniaceous fungi, 156 (1997) 157

Arctic charr

Iodoxanthin, a major carotenoid in the flesh of Arctic charr (*Salvelinus alpinus*) fed diets containing astaxanthin, 150 (1997) 135

Areomonas salmonicida

Genetic correlations between survival of Atlantic salmon in challenge and field tests, 158 (1997) 277

Arginine

Can crystalline arginine be used to quantify the arginine requirement of abalone?, 157 (1997) 95

***Argopecten purpuratus* disease**

Potential probiotic strains in the culture of the Chilean scallop *Argopecten purpuratus* (Lamarck, 1819), 154 (1997) 17

***Argopecten ventricosus* (= *circularis*)**

Suspension culture of catarina scallop *Argopecten ventricosus* (= *circularis*) (Sowerby II, 1842), in Bahia Magdalena, Mexico, at different densities, 158 (1997) 235

Artemia

Growth and survival of larval snakehead (*Channa striatus*) fed different diets, 148 (1997) 105

Introduction of detrital food webs into an aquaculture system by supplying single cell algal detritus produced from *Laminaria japonica* as a hatchery diet for *Artemia* nauplii, 154 (1997) 125

The effect of supplemental ascorbic acid in enriched live food for *Clarias gariepinus* larvae at startfeeding, 151 (1997) 245

The mode of action of *Artemia* in enhancing utilization of microdiet by gilthead seabream *Sparus aurata* larvae, 155 (1997) 193

- The stability of docosa-hexaenoic acid in two *Artemia* species following enrichment and subsequent starvation, 155 (1997) 135
- The use of silages prepared from fish neural tissues as enrichers for rotifers (*Brachionus plicatilis*) and *Artemia* in the nutrition of larval marine fish, 148 (1997) 213
- Effects of live food and dietary digestive enzymes on the efficiency of microdiets for seabass (*Dicentrarchus labrax*) larvae, 148 (1997) 313
- Artemia biomass**
Maturation performance of *Penaeus vannamei* co-fed *Artemia* biomass preparations, 155 (1997) 87
- Ascophyllum meal**
Usefulness of *Ascophyllum* meal as a feed additive for red sea bream, *Pagrus major*, 151 (1997) 275
- Ascorbate-glucose**
Stability and bioavailability of vitamin C-glucose in *Clarias* hybrid catfish (*Clarias gariepinus* × *Clarias macrocephalus*), 151 (1997) 219
- Ascorbic acid**
Optimization of dietary vitamin C in fish and crustacean larvae: a review, 155 (1997) 165
- Pathological findings owing to the lack of ascorbic acid in cultured gilthead bream (*Sparus aurata* L.), 151 (1997) 209
- The effect of supplemental ascorbic acid in enriched live food for *Clarias gariepinus* larvae at startfeeding, 151 (1997) 245
- Ascorbyl-2-monophosphate-magnesium**
Different concentrations of ascorbyl-2-monophosphate-magnesium as dietary sources of vitamin C for seabass, *Lates calcarifer*, 151 (1997) 225
- Assimilation**
Assimilation of gelatin-acacia microencapsulated lipid by Pacific oyster (*Crassostrea gigas*) spat, 153 (1997) 291
- Association of pulse chase design, compartmental analysis and analog modeling to assess absorption and assimilation efficiencies in *Penaeus stylirostris* fed an artificial diet, 149 (1997) 71
- Effects of live food and dietary digestive enzymes on the efficiency of microdiets for seabass (*Dicentrarchus labrax*) larvae, 148 (1997) 313
- The mode of action of *Artemia* in enhancing utilization of microdiet by gilthead seabream *Sparus aurata* larvae, 155 (1997) 193
- Astacus astacus**
A comparison of the known life forms of *Psorospermium* spp. in freshwater crayfish (Arthropoda, decapoda) with emphasis on *Astacus astacus* L. (Astacidae) and *Procambarus clarkii* (Girard) (Cambaridae), 149 (1997) 15
- Signal crayfish, *Pacifastacus leniusculus*, as a vector for *Psorospermium haeckeli* to noble crayfish, *Astacus astacus*, 148 (1996) 1
- Astaxanthin**
Effects of dietary astaxanthin supplementation on fertilization and egg survival in Atlantic salmon (*Salmo salar* L.), 153 (1997) 51
- Idoxanthin, a major carotenoid in the flesh of Arctic charr (*Salvelinus alpinus*) fed diets containing astaxanthin, 150 (1997) 135
- Astaxanthin E/Z-stereoisomers**
Bioavailability of all-E-astaxanthin and Z-isomers of astaxanthin in rainbow trout (*Oncorhynchus mykiss*), 157 (1997) 63
- Atlantic halibut**
Effects of salinity on yolk sac larvae of Atlantic halibut (*Hippoglossus hippoglossus* L.), 156 (1997) 291
- Effects of temperature on yolk sac larvae of Atlantic halibut (*Hippoglossus hippoglossus* L.), 157 (1997) 123
- Atlantic salmon**
Anorexia in one-sea-winter Atlantic salmon (*Salmo salar*) during summer, associated with sexual maturation, 151 (1997) 405
- Availability of phosphorus in fish bone meal and inorganic salts to Atlantic salmon (*Salmo*

- salar*) as determined by retention, 157 (1997) 51
- Changes in oxytetracycline resistance of intestinal microflora following oral administration of this agent to Atlantic Salmon (*Salmo salar* L.) smolts in a marine environment, 157 (1997) 187
- Effects of dietary astaxanthin supplementation on fertilization and egg survival in Atlantic salmon (*Salmo salar* L.), 153 (1997) 51
- Effects of growth hormone treatment on oxygen consumption and sea water adaptability in Atlantic salmon parr and pre-smolts, 148 (1996) 49
- Evaluation of a nondestructive diagnostic test for *Kudoa thyrsites* in farmed Atlantic salmon (*Salmo salar*), 156 (1997) 139
- Evidence for adaptive matching of appetite in juvenile Atlantic salmon (*Salmo salar*) with regular seasonal rhythms of food availability, 151 (1997) 411
- Inheritance of RAPD markers and detection of interspecific hybridization with brown trout and Atlantic salmon, 152 (1997) 55
- Replacement of protein by fat and carbohydrate in diets for Atlantic salmon (*Salmo salar*) at the end of the freshwater stage, 152 (1997) 167
- The effects of hydrogen peroxide on the gill tissues of Atlantic salmon, *Salmo salar* L., 153 (1997) 181
- The efficacy of hydrogen peroxide for the treatment of farmed Atlantic salmon, *Salmo salar* L. infested with sea lice (Copepoda: Caligidae), 148 (1997) 265
- The genetic consequence of hatchery-rearing on life-history traits of the Atlantic salmon (*Salmo salar* L.): a comparative analysis of sea-ranched salmon with wild and reared parents, 153 (1997) 207
- Atlantic salmon (*Salmo salar* L.)**
- Susceptibility to furunculosis, cold water vibriosis, and infectious pancreatic necrosis (IPN) in post-smolt Atlantic salmon (*Salmo salar* L.) as a function of smolt status by seawater transfer, 158 (1997) 179
- Availability**
- Availability of phosphorus in fish bone meal and inorganic salts to Atlantic salmon (*Salmo salar*) as determined by retention, 157 (1997) 51
- Bacteria**
- Epizootiological aspects of *Streptococcus iniae* affecting tilapia in Texas, 152 (1997) 25
- Mini-Tn5 induced growth- and protease-deficient mutants of *Aeromonas hydrophila* as live vaccines for blue gourami, *Trichogaster trichopterus* (Pallas), 158 (1997) 11
- The role of microorganisms in aquaculture ponds, 151 (1997) 333
- Bacterial analysis**
- Vibrios associated with routine productions of *Brachionus plicatilis*, 149 (1997) 203
- Bacterial ECP**
- A continuous cell line from the cultured marine fish gilt-head seabream (*Sparus aurata* L.), 150 (1997) 143
- Bacterial gill disease**
- Ozonation of a recirculating rainbow trout culture system. I. Effects on bacterial gill disease and heterotrophic bacteria, 158 (1997) 43
- Bacterial pathogens**
- Vaccination improves survival of Baltic salmon (*Salmo salar*) smolts in delayed release sea ranching (net-pen period), 156 (1997) 335
- Bacterial resistance**
- Minimum inhibitory concentrations of selected antimicrobial compounds against *Flavobacterium psychrophilum* the causal agent of rainbow trout fry syndrome (RTFS), 158 (1997) 193
- Baltic sea**
- Vaccination improves survival of Baltic salmon (*Salmo salar*) smolts in delayed release sea ranching (net-pen period), 156 (1997) 335

Barbodes altus

Growth response of juvenile *Barbodes altus* fed isocaloric diets with variable protein levels, 158 (1997) 321

Barley straw

Barley straw inhibits growth of some aquatic saprolegniaceous fungi, 156 (1997) 157

B-chromosome

Evidence of female heterogamety, B-chromosome and natural tetraploidy in the Asian catfish, *Clarias batrachus*, used in aquaculture, 149 (1997) 31

Behaviour

Feed intake and growth of Atlantic halibut (*Hippoglossus hippoglossus* L.) fed combinations of pellet sizes, 156 (1997) 1

Larval behaviour and effect of the timing of initial feeding on growth and survival of Siberian sturgeon (*Acipenser baeri*) larvae under small scale hatchery production, 156 (1997) 63

The use of behavioural observations in the larviculture of cold-water marine fish, 155 (1997) 297

Benthic diatom

Survival and growth rates of post-larval abalone *Haliotis discus hannai* fed conspecific trail mucus and/or benthic diatom *Cocconeis scutellum* var. *parva*, 152 (1997) 129

Benthic macroinvertebrates

Relative prawn production and benthic macroinvertebrate densities in unfed, organically fertilized, and fed pond systems, 149 (1997) 227

Benzocaine

Pharmacokinetics of benzocaine in rainbow trout (*Oncorhynchus mykiss*) after intraarterial dosing, 148 (1996) 39

Betaine

Identification of feed enhancers for juvenile largemouth bass *Micropterus salmoides*, 148 (1997) 191

Bioactive compounds

Influence of explant procedures and environmental factors on culture success of three sponges, 156 (1997) 251

Bioavailability

Bioavailability of all-*E*-astaxanthin and *Z*-isomers of astaxanthin in rainbow trout (*Oncorhynchus mykiss*), 157 (1997) 63

Biochemical composition

Changes in biochemical profile of *Tetraselmis gracilis* I. Comparison of two culture media, 148 (1997) 153

Biochemistry

Effect of starvation on some morphological and biochemical parameters in white sturgeon, *Acipenser transmontanus*, 151 (1997) 357

Bioeconomics

Bioeconomic evaluation of different fry production systems for milkfish (*Chanos chanos*), 155 (1997) 367

Biofiltration

A biomechanical filter for treating fish-pond effluents, 152 (1997) 103

Biofouling

Biofouling of fish-cage netting: efficacy and problems of in situ cleaning, 152 (1997) 77

Bioturbation

Benthic metabolism and the effects of bioturbation in a fertilised polyculture fish pond in northeast Thailand, 150 (1997) 45

Bivalve

A biomechanical filter for treating fish-pond effluents, 152 (1997) 103

Impacts of ectoparasitic gastropods on growth, survival, and physiology of juvenile giant clams (*Tridacna gigas*), including a simulation model of mortality and reduced growth rate, 150 (1997) 25

Bivalve broodstocks

Techniques for the hatchery conditioning of bivalve broodstocks and the subsequent effect on egg quality and larval viability, 155 (1997) 45

Black crappie

Sex reversal in black crappie *Pomoxis nigromaculatus*: effect of oral administration of 17 α -methyltestosterone on two age classes, 158 (1997) 155

Blastomeres

Blastomere morphology as a predictive measure of fish egg viability, 155 (1997) 1

Blue abalone

Protein-hydrolyzing enzymes in the digestive systems of the adult Mexican blue abalone, *Haliotis fulgens* (Gastropoda), 157 (1997) 325

Boccardia

Spionid polychaete infestations of intertidal pacific oysters *Crassostrea gigas* (Thunberg), Mahurangi Harbour, northern New Zealand, 153 (1997) 191

Body size

Effect of body size on growth and energy budget of Nile tilapia, *Oreochromis niloticus*, 157 (1997) 25

Bombesin

The mode of action of *Artemia* in enhancing utilization of microdiet by gilthead seabream *Sparus aurata* larvae, 155 (1997) 193

Bone mineralization

Available phosphorus requirements of food-size channel catfish (*Ictalurus punctatus*) fed practical diets in ponds, 154 (1997) 283

Brachionus plicatilis

Mass production and preservation of the resting eggs of the euryhaline rotifer *Brachionus plicatilis* and *B. rotundiformis*, 155 (1997) 223

Protein and carbon utilization of rotifers (*Brachionus plicatilis*) in first feeding of turbot larvae (*Scophthalmus maximus* L.), 153 (1997) 103

Vibrios associated with routine productions of *Brachionus plicatilis*, 149 (1997) 203

Branchiostegal rays

Morphological abnormalities in hatchery-bred milkfish (*Chanos chanos* Forsskal) fry and juveniles, 152 (1997) 155

Brazil

Food ingestion and assimilation by the Southern brown shrimp *Penaeus subtilis* under semi-intensive culture in NE Brazil, 149 (1997) 121

Breeding

A review of the effect of genetics and environment on the maturation and larval quality of the giant tiger prawn *Penaeus monodon*, 155 (1997) 69

Domestication of the white grouper, *Epinephelus aeneus*. 1. Growth and reproduction, 156 (1997) 305

Estimates for the heritability of size in juvenile *Penaeus monodon* prawns from half-sib matings, 152 (1997) 49

Breeding programs

Application of the microsatellite technique for analyzing genetic diversity in shrimp breeding programs, 152 (1997) 35

Britain

RAPD evidence for the origin of crayfish plague outbreaks in Britain, 157 (1997) 181

Broodstock

Influence of dietary protein content on the distribution of amino acids in oocytes, serum and muscle of Nile tilapia, *Oreochromis niloticus* (L.), 152 (1997) 205

Influence of dietary protein level on ovarian recrudescence in Nile tilapia, *Oreochromis niloticus* (L.), 149 (1997) 57

Maturation performance of *Penaeus vannamei* co-fed *Artemia* biomass preparations, 155 (1997) 87

Seasonal and age variability in the reproductive performance of *Penaeus semisulcatus* broodstock: optimising broodstock selection, 155 (1997) 55

Broodstock nutrition

Effects of broodstock diets on fatty acid composition, survival and growth rates in larvae of the European flat oyster, *Ostrea edulis*, 154 (1997) 139

Broodstock selection

Genetic implications of broodstock selection for crayfish aquaculture in the Midwestern United States, 154 (1997) 39

B. rotundiformis

Mass production and preservation of the resting eggs of the euryhaline rotifer *Brachionus plicatilis* and *B. rotundiformis*, 155 (1997) 223

Brown trout

Inheritance of RAPD markers and detection of interspecific hybridization with brown trout and Atlantic salmon, 152 (1997) 55

Bullfrog

Use of artificial grazing substrates in bullfrog tadpole culture, 152 (1997) 91

Burrowing sponge

The first incidence of clonid sponges (Porifera) from the Sydney rock oyster *Saccostrea commercialis* (Iredale and Roughley, 1933), 157 (1997) 173

¹⁴C

Association of pulse chase design, compartmental analysis and analog modeling to assess absorption and assimilation efficiencies in *Penaeus stylirostris* fed an artificial diet, 149 (1997) 71

Cacao husk

A preliminary evaluation of cacao husks in practical diets for juvenile Nile tilapia (*Oreochromis niloticus*), 156 (1997) 211

Cadmium

Effect of stocking densities on trace metal concentration in three tissues of the brown shrimp *Penaeus californiensis*, 156 (1997) 21

Cage culture

The effect of stocking density on yield, growth and mortality of African catfish (*Clarias gariepinus* Burchell 1822) cultured in cages, 152 (1997) 67

Calcium

Effect of stocking densities on trace metal concentration in three tissues of the brown shrimp *Penaeus californiensis*, 156 (1997) 21

Canola meal

Effects of enzyme addition to canola meal in prawn diets, 151 (1997) 29

Growth and body composition of channel catfish (*Ictalurus punctatus*) fed diets containing various percentages of canola meal, 150 (1997) 103

Carbohydrate

Effect of feeding strategy and carbohydrate source on carbohydrate utilization by white sturgeon (*Acipenser transmontanus*) and hybrid tilapia (*Oreochromis niloticus* × *O. aureus*), 148 (1997) 201

Growth of juvenile Asian seabass, *Lates calcarifer*, fed varying carbohydrate and lipid levels, 149 (1997) 137

Nutritional properties of microalgae for mariculture, 151 (1997) 315

Utilization of carbohydrates in warmwater fish —with particular reference to tilapia, *Oreochromis niloticus* × *O. aureus*, 151 (1997) 79

Carbohydrates

Replacement of protein by fat and carbohydrate in diets for atlantic salmon (*Salmo salar*) at the end of the freshwater stage, 152 (1997) 167

Carnitine

Effect of supplemental carnitine on body weight loss, proximate and lipid compositions and carnitine content of red sea bream (*Pagrus major*) during starvation, 158 (1997) 129

Carotenoids

Iodoxanthin, a major carotenoid in the flesh of Arctic charr (*Salvelinus alpinus*) fed diets containing astaxanthin, 150 (1997) 135

Carp

Apparent digestibility of tuna oil for common carp, *Cyprinus carpio* — effect of inclusion level and adaptation time, 148 (1997) 143

Nutritional value of soy protein concentrate for larvae of common carp (*Cyprinus carpio*) based on growth performance and digestive enzyme activities, 153 (1997) 63

Carp polyculture

Formulation of cost-effective feeds from locally available ingredients for carp polyculture system for increased production, 151 (1997) 71

CASA

Objective analysis of sperm motility in the lake sturgeon, *Acipenser fulvescens*: activation and inhibition conditions, 154 (1997) 337

Catfish

Genomic identification of catfish species by polymerase chain reaction and restriction enzyme analysis of the gene encoding the immunoglobulin M heavy chain constant region, 156 (1997) 129

LHRHa and pimozone-induced spawning of Asian catfish *Clarias macrocephalus* (Gunther) at different times during an annual reproductive cycle, 148 (1997) 323

Cations

Effect of stocking densities on trace metal concentration in three tissues of the brown shrimp *Penaeus californiensis*, 156 (1997) 21

Caudal complex

Normal and abnormal osteological development of caudal fin in *Sparus aurata* L. fry, 149 (1997) 215

Cell line

The establishment and partial characterization of a continuous fish cell line FG-9307 from the gill of flounder *Paralichthys olivaceus*, 156 (1997) 327

hCG

Sex reversal in black crappie *Pomoxis nigromaculatus*: effect of oral administration of 17 α -methyltestosterone on two age classes, 158 (1997) 155

Channa striata

Interactions of dietary levels of protein and energy on fingerling snakehead, *Channa striata*, 156 (1997) 241

Growth and survival of larval snakehead (*Channa striatus*) fed different diets, 148 (1997) 105

Channel catfish

Available phosphorus requirements of food-size channel catfish (*Ictalurus punctatus*) fed practical diets in ponds, 154 (1997) 283

Growth and body composition of channel catfish (*Ictalurus punctatus*) fed diets containing various percentages of canola meal, 150 (1997) 103

Niacin requirement and inability of tryptophan to act as a precursor of NAD⁺ in channel catfish, *Ictalurus punctatus*, 152 (1997) 273

Organic selenium sources, selenomethionine and selenoyeast, have higher bioavailability than an inorganic selenium source, sodium selenite, in diets for channel catfish (*Ictalurus punctatus*), 152 (1997) 223

Chanos chanos

Morphological abnormalities in hatchery-bred milkfish (*Chanos chanos* Forsskal) fry and juveniles, 152 (1997) 155

Nutrient requirements of marine food fish cultured in Southeast Asia, 151 (1997) 283

Chelon labrosus

Preliminary assessment of the seaweed *Porphyra purpurea* in artificial diets for thick-lipped grey mullet (*Chelon labrosus*), 152 (1997) 249

Chemical cues

Spat settlement of the giant scallop, *Placopecten magellanicus* (Gmelin, 1791), and other bivalve species on artificial filamentous collectors coated with chitinous material, 148 (1997) 277

Chemoattractant

Enhancement of growth in juvenile freshwater prawns, *Macrobrachium rosenbergii*, through the use of a chemoattractant, 156 (1997) 221

Cherax destructor

Response of the yabby, *Cherax destructor* Clark, to natural and artificial diets: phenotypic variation in juvenile growth, 149 (1997) 39

***Cherax* Giardiavirus-like virus**

Age at first infection of *Cherax quadricarinatus* by *Cherax quadricarinatus* bacilliform virus and *Cherax* Giardiavirus-like virus, and production of putative virus-free crayfish, 152 (1997) 1

Cherax quadricarinatus

Age at first infection of *Cherax quadricarinatus* by *Cherax quadricarinatus* bacilliform virus and *Cherax* *Giardiavirus*-like virus, and production of putative virus-free crayfish, 152 (1997) 1

Annual cycle of spawning and molting in the red-claw crayfish, *Cherax quadricarinatus*, under laboratory conditions, 157 (1997) 239

Ration and spatial distribution of feed affect survival, growth, and competition in juvenile red-claw crayfish, *Cherax quadricarinatus*, reared in the laboratory, 148 (1997) 169

Reproduction and molt in previously spawned and first-time spawning red-claw crayfish *Cherax quadricarinatus* females following eye-stalk ablation during the winter reproductive-arrest period, 156 (1997) 101

***Cherax quadricarinatus* bacilliform virus**

Age at first infection of *Cherax quadricarinatus* by *Cherax quadricarinatus* bacilliform virus and *Cherax* *Giardiavirus*-like virus, and production of putative virus-free crayfish, 152 (1997) 1

Chile

Integrated marine cultivation of *Gracilaria chilensis* (Gracilariales, Rhodophyta) and salmon cages for reduced environmental impact and increased economic output, 156 (1997) 45

Intertidal cultivation of *Gracilaria chilensis* (Rhodophyta) in southern Chile: long term invertebrate abundance patterns, 156 (1997) 269

Chinook salmon

Control of growth and adiposity of juvenile chinook salmon (*Oncorhynchus tshawytscha*), 157 (1997) 311

Impact of a controlled release formulation of recombinant bovine growth hormone upon growth and seawater adaptation in coho (*Oncorhynchus kisutch*) and chinook (*Oncorhynchus tshawytscha*) salmon, 156 (1997) 113

Chironomid larvae

Nutritional values of chironomid larvae grown in palm oil mill effluent and algal culture, 158 (1997) 95

Chitin

Spat settlement of the giant scallop, *Placopecten magellanicus* (Gmelin, 1791), and other bivalve species on artificial filamentous collectors coated with chitinous material, 148 (1997) 277

Choline

Growth and body composition of juvenile red drum (*Sciaenops ocellatus*) fed diets containing lecithin and supplemental choline, 151 (1997) 259

Chromic oxide

Influence of differential movement of the marker chromic oxide and nutrients on digestibility estimations in the Australian freshwater crayfish *Cherax destructor*, 154 (1997) 323

Chromium

Utilization of carbohydrates in warmwater fish —with particular reference to tilapia, *Oreochromis niloticus* × *O. aureus*, 151 (1997) 79

Chromosome

Karyotypes and Ag-NORs of the mussels *Mytilus californianus* and *M. trossulus* from the Pacific Canadian coast, 153 (1997) 239

Chronic toxicity

Chronic ammonia toxicity in juvenile turbot (*Scophthalmus maximus*), 154 (1997) 155

Chrono-biology

Induction of spawning in gilthead seabream, *Sparus aurata* L., by a long-acting GnRH agonist and its effects on egg quality and daily timing of spawning, 154 (1997) 349

Chymotrypsin

Protein-hydrolyzing enzymes in the digestive systems of the adult Mexican blue abalone, *Haliotis fulgens* (Gastropoda), 157 (1997) 325

CIE ($L^* a^* b^*$) color characteristics

Quality parameters of the flesh of Atlantic salmon (*Salmo salar*) as affected by dietary fat content and full-fat soybean meal as a partial substitute for fish meal in the diet, 157 (1997) 297

Clam

Growth of clam seed (*Ruditapes decussatus*) reared in the wastewater effluent from a fish farm in Galicia (N.W. Spain), 158 (1997) 247

Clarias batrachus

Evidence of female heterogamety, B-chromosome and natural tetraploidy in the Asian catfish, *Clarias batrachus*, used in aquaculture, 149 (1997) 31

Clarias gariepinus

The effect of supplemental ascorbic acid in enriched live food for *Clarias gariepinus* larvae at startfeeding, 151 (1997) 245

Clarias hybrid catfish

Stability and bioavailability of vitamin C-glucose in *Clarias* hybrid catfish (*Clarias gariepinus* × *Clarias macrocephalus*), 151 (1997) 219

Cleaning

Fouling animals and their effect on the growth of silver-lip pearl oysters, *Pinctada maxima* (Jameson) in suspended culture, 153 (1997) 31

Cleavage

Blastomere morphology as a predictive measure of fish egg viability, 155 (1997) 1

Cliona celata

The first incidence of clionid sponges (Porifera) from the Sydney rock oyster *Saccostrea commercialis* (Iredale and Roughley, 1933), 157 (1997) 173

Cliona vastifica

The first incidence of clionid sponges (Porifera) from the Sydney rock oyster *Saccostrea commercialis* (Iredale and Roughley, 1933), 157 (1997) 173

Clionidae

The first incidence of clionid sponges (Porifera) from the Sydney rock oyster *Saccostrea commercialis* (Iredale and Roughley, 1933), 157 (1997) 173

Clonal strain

Growth performance in clonal crucian carp, *Carassius langsdorfii*. Effects of genetic difference and feeding history, 155 (1997) 271

Cod

Effects of different levels of vitamin K in diets for cod (*Gadus morhua*), 151 (1997) 269

Co-feeding

The mode of action of *Artemia* in enhancing utilization of microdiet by gilthead seabream *Sparus aurata* larvae, 155 (1997) 193

Coho salmon

Impact of a controlled release formulation of recombinant bovine growth hormone upon growth and seawater adaptation in coho (*Oncorhynchus kisutch*) and chinook (*Oncorhynchus tshawytscha*) salmon, 156 (1997) 113

Cold shock

Optimal conditions for the induction of triploidy in the sea bass (*Dicentrarchus labrax* L.), 152 (1997) 287

Collectors

Spat settlement of the giant scallop, *Placopecten magellanicus* (Gmelin, 1791), and other bivalve species on artificial filamentous collectors coated with chitinous material, 148 (1997) 277

Color tristimuli analysis

Bioavailability of all-*E*-astaxanthin and *Z*-isomers of astaxanthin in rainbow trout (*Oncorhynchus mykiss*), 157 (1997) 63

Common carp

Evaluation of some plant ingredients as dietary protein sources for common carp (*Cyprinus carpio* L.) fry, 151 (1997) 55

Influence of salinity on food consumption, growth and energy conversion efficiency of common carp (*Cyprinus carpio*) fingerlings, 148 (1997) 115

Metabolic response to feeding rates in common carp, *Cyprinus carpio*, 151 (1997) 371

Computerized X-ray tomography

Quality parameters of the flesh of Atlantic salmon (*Salmo salar*) as affected by dietary fat content and full-fat soybean meal as a partial substitute for fish meal in the diet, 157 (1997) 297

Concentrate

Diet and feeding regimens for larval doughboy scallops, *Mimachlamys asperrima*, 158 (1997) 289

Condition factor

Larval behaviour and effect of the timing of initial feeding on growth and survival of Siberian sturgeon (*Acipenser baeri*) larvae under small scale hatchery production, 156 (1997) 63

Contaminating invertebrates

Intertidal cultivation of *Gracilaria chilensis* (Rhodophyta) in southern Chile: long term invertebrate abundance patterns, 156 (1997) 269

Continuous-flow chamber

Suitability of a continuous-flow chamber for investigating fish larvae/fry growth responses, 151 (1997) 365

Cooking-extruded diets

Growth of European sea bass fingerlings (*Dicentrarchus labrax*) fed extruded diets containing varying levels of protein, lipid and carbohydrate, 156 (1997) 183

Copepods

Production and use of copepods in marine fish larviculture, 155 (1997) 231

Vitamin B₆ in Atlantic halibut, *Hippoglossus hippoglossus*—endogenous utilization and retention in larvae fed natural zooplankton, 157 (1997) 337

Copper

Effect of stocking densities on trace metal concentration in three tissues of the brown shrimp *Penaeus californiensis*, 156 (1997) 21

Trace minerals in fish nutrition, 151 (1997) 185

Coregonids

Influence of the length of the daily feeding period on feed intake and growth of whitefish, *Coregonus lavaretus*, 156 (1997) 35

Coregonus lavaretus

Influence of the length of the daily feeding period on feed intake and growth of whitefish, *Coregonus lavaretus*, 156 (1997) 35

Cortical rods

A comparative study of the ovarian development in wild and pond-reared shrimp, *Penaeus kerathurus* (Forskål, 1775), 148 (1996) 63

Cortisol

Non-specific immune responses in the red porgy *Pagrus pagrus* after crowding stress, 156 (1997) 279

Stress induced elevation of plasma cortisol in adult female coho salmon (*Oncorhynchus kisutch*), is reflected in egg cortisol content, but does not appear to affect early development, 158 (1997) 141

Cost of growth

The cost of growth in young fish larvae, a review of new hypotheses, 155 (1997) 259

Cost of protein synthesis

The cost of growth in young fish larvae, a review of new hypotheses, 155 (1997) 259

Cowpea

Cowpea (*Vigna unguiculata*) protein concentrate as replacement for fish meal in diets for tilapia (*Oreochromis niloticus*) fry, 158 (1997) 107

Crab

Use of prophylactic treatments for larval rearing of giant crabs *Pseudocarcinus gigas* (Lamarck), 158 (1997) 203

Crassostrea gigas

A population dynamics model for the Japanese oyster, *Crassostrea gigas*, 149 (1997) 285

Assimilation of gelatin-acacia microencapsulated lipid by Pacific oyster (*Crassostrea gigas*) spat, 153 (1997) 291

Effects of trophic and environmental conditions on the growth of *Crassostrea gigas* in culture, 153 (1997) 81

Growth and fatty acid composition of Pacific oyster (*Crassostrea gigas*) spat fed a spray-dried freshwater microalga (*Spongiococcum eccentricum*) and microencapsulated lipids, 154 (1997) 293

Preingestive selection of different microalgal mixtures in *Crassostrea gigas* and *Mytilus edulis*, analysed by flow cytometry, 150 (1997) 123

Crayfish

A comparison of the known life forms of *Psorospermium* spp. in freshwater crayfish (Arthropoda, decapoda) with emphasis on *Astacus astacus* L. (Astacidae) and *Procambarus clarkii* (Girard) (Cambaridae), 149 (1997) 15

Genetic implications of broodstock selection for crayfish aquaculture in the Midwestern United States, 154 (1997) 39

Marron (*Cherax tenuimanus*) and noble crayfish (*Astacus astacus*) hepatopancreas energy and its relationship to moisture content, 149 (1997) 157

Ration and spatial distribution of feed affect survival, growth, and competition in juvenile red-claw crayfish, *Cherax quadricarinatus*, reared in the laboratory, 148 (1997) 169

Crayfish parasite

Signal crayfish, *Pacifastacus leniusculus*, as a vector for *Psorospermium haeckeli* to noble crayfish, *Astacus astacus*, 148 (1996) 1

Crayfish plague

RAPD evidence for the origin of crayfish plague outbreaks in Britain, 157 (1997) 181

Cross-reactivity

Characterization of core-oligosaccharide- and O-polysaccharide-specific monoclonal antibodies against *Aeromonas salmonicida* LPS binding to typical and atypical *Aeromonas salmonicida* isolates, 157 (1997) 157

Crowding

A re-appraisal of the potential of the sole, *Solea solea* (L.), for commercial cultivation, 155 (1997) 355

Non-specific immune responses in the red porgy *Pagrus pagrus* after crowding stress, 156 (1997) 279

Crucian carp

Growth performance in clonal crucian carp, *Carassius langsdorffii*. Effects of genetic difference and feeding history, 155 (1997) 271

Crustacea

Reproduction and molt in previously spawned and first-time spawning red-claw crayfish

Cherax quadricarinatus females following eye-stalk ablation during the winter reproductive-arrest period, 156 (1997) 101

Crustacean larvae

The digestive physiology of herbivorous, omnivorous and carnivorous crustacean larvae: a review, 155 (1997) 285

Crustaceans

Review on the dietary effects of phospholipids in fish and crustacean larviculture, 155 (1997) 149

Cryopreservation

Carp (*Cyprinus carpio* L.) spermatozoa cryobanks — strategies in research and application, 155 (1997) 13

Cryopreservation of late embryos and early larvae in the oyster and hard clam, 155 (1997) 31

Cultivation

A re-appraisal of the potential of the sole, *Solea solea* (L.), for commercial cultivation, 155 (1997) 355

Production and use of copepods in marine fish larviculture, 155 (1997) 231

Culture media

Changes in biochemical profile of *Tetraselmis gracilis* I. Comparison of two culture media, 148 (1997) 153

Culture methods

Mass cultivation of the agar-producing alga *Gracilaria chilensis* (Rhodophyta) from spores, 148 (1997) 77

Culture traits

Genotype and environment: A comparative evaluation of four tilapia stocks in Fiji, 150 (1997) 11

Cyprinus carpio

Distribution of genetic variance in gynogenetic or androgenetic families, 153 (1997) 225

Evaluation of some plant ingredients as dietary protein sources for common carp (*Cyprinus carpio* L.) fry, 151 (1997) 55

- Genetic analysis of testis development in all-male F1 hybrid strains of common carp, *Cyprinus carpio*, 158 (1997) 33
- Influence of salinity on food consumption, growth and energy conversion efficiency of common carp (*Cyprinus carpio*) fingerlings, 148 (1997) 115
- Metabolic response to feeding rates in common carp, *Cyprinus carpio*, 151 (1997) 371
- Cytophaga psychrophila***
Minimum inhibitory concentrations of selected antimicrobial compounds against *Flavobacterium psychrophilum* the causal agent of rainbow trout fry syndrome (RTFS), 158 (1997) 193
- Daily ration**
Influence of the length of the daily feeding period on feed intake and growth of whitefish, *Coregonus lavaretus*, 156 (1997) 35
- Daphnia carinata***
Effect of manuring rate on in situ production of zooplankton *Daphnia carinata*, 156 (1997) 85
- Decapoda**
Reproduction and molt in previously spawned and first-time spawning red-claw crayfish *Cherax quadricarinatus* females following eye-stalk ablation during the winter reproductive-arrest period, 156 (1997) 101
- Defence**
The use of immunostimulation in marine larviculture: possibilities and challenges, 155 (1997) 401
- Deformity**
Morphological abnormalities in hatchery-bred milkfish (*Chanos chanos* Forsskal) fry and juveniles, 152 (1997) 155
- Degradation**
An empirical model for predicting degradation of organic solids in fish culture systems based on short-term observations, 154 (1997) 173
- Degree of hydrolysis**
pH-stat method to predict protein digestibility in white shrimp (*Penaeus vannamei*), 157 (1997) 251
- Denitrification**
Benthic metabolism and the effects of bioturbation in a fertilised polyculture fish pond in northeast Thailand, 150 (1997) 45
- Depletion study**
Depletion study of fenbendazole in rainbow trout (*Oncorhynchus mykiss*) after oral and bath treatment, 154 (1997) 191
- Depot microcapsule**
Induction of spawning in gilthead seabream, *Sparus aurata* L., by a long-acting GnRH agonist and its effects on egg quality and daily timing of spawning, 154 (1997) 349
- Depuration**
Oxygen uptake and ammonia-N excretion of juvenile *Penaeus japonicus* during depuration following one-day exposure to different concentrations of saponin at different salinity levels, 156 (1997) 77
- Detritus**
Introduction of detrital food webs into an aquaculture system by supplying single cell algal detritus produced from *Laminaria japonica* as a hatchery diet for *Artemia* nauplii, 154 (1997) 125
- DHA**
Effects of docosahexaenoic acid and phospholipids on stress tolerance of fish, 155 (1997) 129
- Diagnostic test**
Evaluation of a nondestructive diagnostic test for *Kudoa thyrsites* in farmed Atlantic salmon (*Salmo salar*), 156 (1997) 139
- Dicentrarchus labrax***
Dominant intestinal microflora of sea bream and sea bass larvae, from two hatcheries, during larval development, 155 (1997) 387
- Effect of water currents on the development of skeletal deformities in sea bass (*Dicentrarchus labrax* L.) with functional swimbladder during postlarval and nursery phase, 156 (1997) 145
- Growth of European sea bass fingerlings (*Dicentrarchus labrax*) fed extruded diets containing varying levels of protein, lipid and carbohydrate, 156 (1997) 183

Optimal conditions for the induction of triploidy in the sea bass (*Dicentrarchus labrax* L.), 152 (1997) 287

Diet

A moist artificial diet for prawn broodstock: its effect on the variable reproductive performance of wild caught *Penaeus monodon*, 149 (1997) 145

Diet and feeding regimens for larval doughboy scallops, *Mimachlamys asperrima*, 158 (1997) 289

Response of the yabby, *Cherax destructor* Clark, to natural and artificial diets: phenotypic variation in juvenile growth, 149 (1997) 39

Rice-fish culture: feeding, growth and yield of two size classes of *Puntius gonionotus* Bleeker and *Oreochromis* spp. in Bangladesh, 154 (1997) 261

The effect of diet on dorsal fin erosion in steelhead trout (*Oncorhynchus mykiss*), 156 (1997) 229

Dietary fat level

Quality parameters of the flesh of Atlantic salmon (*Salmo salar*) as affected by dietary fat content and full-fat soybean meal as a partial substitute for fish meal in the diet, 157 (1997) 297

Dietary iron

Responses of channel catfish (*Ictalurus punctatus*) fed iron-deficient and replete diets to *Edwardsiella ictaluri* challenge, 157 (1997) 83

Dietary lipid

Control of growth and adiposity of juvenile chinook salmon (*Oncorhynchus tshawytscha*), 157 (1997) 311

Dietary phosphorus deficiency

Metabolic response to dietary phosphorus intake in rainbow trout (*Oncorhynchus mykiss*), 157 (1997) 11

Dietary protein

Influence of dietary protein content on the distribution of amino acids in oocytes, serum and muscle of Nile tilapia, *Oreochromis niloticus* (L.), 152 (1997) 205

Influence of dietary protein level on ovarian recrudescence in Nile tilapia, *Oreochromis niloticus* (L.), 149 (1997) 57

Dietary requirement

Growth response of juvenile *Barbodes altus* fed isocaloric diets with variable protein levels, 158 (1997) 321

Quantitative lysine requirement of yellowtail (*Seriola quinqueradiata*), 158 (1997) 331

Quantitative methionine requirement of yellowtail (*Seriola quinqueradiata*), 150 (1997) 113

Diets

Growth and body composition of channel catfish (*Ictalurus punctatus*) fed diets containing various percentages of canola meal, 150 (1997) 103

Relative prawn production and benthic macroinvertebrate densities in unfed, organically fertilized, and fed pond systems, 149 (1997) 227

Digestibility

Adaptation to soybean meal in diets for rainbow trout, *Oncorhynchus mykiss*, 153 (1997) 263

Apparent digestibility of tuna oil for common carp, *Cyprinus carpio* - effect of inclusion level and adaptation time, 148 (1997) 143

Efficiency of utilization of some potato starch modifications by rainbow trout (*Oncorhynchus mykiss*), 152 (1997) 235

Influence of differential movement of the marker chromic oxide and nutrients on digestibility estimations in the Australian freshwater crayfish *Cherax destructor*, 154 (1997) 323

Replacement of protein by fat and carbohydrate in diets for atlantic salmon (*Salmo salar*) at the end of the freshwater stage, 152 (1997) 167

Digestion

The mode of action of *Artemia* in enhancing utilization of microdiet by gilthead seabream *Sparus aurata* larvae, 155 (1997) 193

Digestive enzyme

Effects of live food and dietary digestive enzymes on the efficiency of microdiets for seabass (*Dicentrarchus labrax*) larvae, 148 (1997) 313

Digestive enzymes

Early weaning of seabass larvae, *Dicentrarchus labrax*: the effect on microbiota, with particular attention to iron supply and exoenzymes, 158 (1997) 117

Influence of age on digestive enzyme activity in some freshwater teleosts, 148 (1996) 25

The digestive physiology of herbivorous, omnivorous and carnivorous crustacean larvae: a review, 155 (1997) 285

Disease

Epizootiological aspects of *Streptococcus iniae* affecting tilapia in Texas, 152 (1997) 25

Disease resistance

Responses of channel catfish (*Ictalurus punctatus*) fed iron-deficient and replete diets to *Edwardsiella ictaluri* challenge, 157 (1997) 83

Diseases and their control in fish

Mini-Tn5 induced growth- and protease-deficient mutants of *Aeromonas hydrophila* as live vaccines for blue gourami, *Trichogaster trichopterus* (Pallas), 158 (1997) 11

Diseases and their control: invertebrates, general

Use of prophylactic treatments for larval rearing of giant crabs *Pseudocarcinus gigas* (Lamarck), 158 (1997) 203

Dissolved oxygen

Critical dissolved oxygen level to *Penaeus setiferus* and *Penaeus schmitti* postlarvae (PL₁₀₋₁₈) exposed to salinity changes, 152 (1997) 259

DNA-fingerprint

Growth performance in clonal crucian carp, *Carassius langsdorfii*. Effects of genetic difference and feeding history, 155 (1997) 271

DNA isolation

Genomic identification of catfish species by polymerase chain reaction and restriction en-

zyme analysis of the gene encoding the immunoglobulin M heavy chain constant region, 156 (1997) 129

DNA sequencing

Genomic identification of catfish species by polymerase chain reaction and restriction enzyme analysis of the gene encoding the immunoglobulin M heavy chain constant region, 156 (1997) 129

Docosaehaenoic acid

The significance of lipids at early stages of marine fish: a review, 155 (1997) 103

The stability of docosaehaenoic acid in two *Artemia* species following enrichment and subsequent starvation, 155 (1997) 135

The use of silages prepared from fish neural tissues as enrichers for rotifers (*Brachionus plicatilis*) and *Artemia* in the nutrition of larval marine fish, 148 (1997) 213

Domestication selection

The genetic consequence of hatchery-rearing on life-history traits of the Atlantic salmon (*Salmo salar* L.): a comparative analysis of sea-ranched salmon with wild and reared parents, 153 (1997) 207

Dorsal muscle

Effect of supplemental carnitine on body weight loss, proximate and lipid compositions and carnitine content of red sea bream (*Pagrus major*) during starvation, 158 (1997) 129

Dummy-run

Domestication of the white grouper, *Epinephelus aeneus*. 1. Growth and reproduction, 156 (1997) 305

Echinoderm

Large-scale laboratory culture of the crown-of-thorns starfish *Acanthaster planci* (L.) (Echinodermata: Asteroidea), 157 (1997) 215

Ectoparasite

Impacts of ectoparasitic gastropods on growth, survival, and physiology of juvenile giant clams (*Tridacna gigas*), including a simulation model of mortality and reduced growth rate, 150 (1997) 25

Edwardsiella ictaluri

Heterologous isolates challenge of channel catfish, *Ictalurus punctatus*, immune to *Edwardsiella ictaluri*, 157 (1997) 147

Effluent

Nutritional values of chironomid larvae grown in palm oil mill effluent and algal culture, 158 (1997) 95

Effluents

A biomechanical filter for treating fish-pond effluents, 152 (1997) 103

Egg quality

Effects of dietary astaxanthin supplementation on fertilization and egg survival in Atlantic salmon (*Salmo salar* L.), 153 (1997) 51

Techniques for the hatchery conditioning of bivalve broodstocks and the subsequent effect on egg quality and larval viability, 155 (1997) 45

Eggs

Effects of broodstock dietary lipid on fatty acid compositions of eggs from sea bass (*Dicentrarchus labrax*), 149 (1997) 107

Eicosapentaenoic acid

The effect of dietary protein and lipid from squid and fish meals on egg quality of broodstock for gilthead seabream (*Sparus aurata*), 148 (1997) 233

The significance of lipids at early stages of marine fish: a review, 155 (1997) 103

The stability of docosahexaenoic acid in two *Artemia* species following enrichment and subsequent starvation, 155 (1997) 135

Embryonic and larval development

Notes on the induced spawning, embryonic and larval development of the window-pane shell, *Placuna placenta* (Linnaeus, 1758), in the laboratory, 157 (1997) 137

Embryos

Cryopreservation of late embryos and early larvae in the oyster and hard clam, 155 (1997) 31

Embryogenesis

Stress induced elevation of plasma cortisol in adult female coho salmon (*Oncorhynchus*

kisutch), is reflected in egg cortisol content, but does not appear to affect early development, 158 (1997) 141

Empirical model

An empirical model for predicting degradation of organic solids in fish culture systems based on short-term observations, 154 (1997) 173

Energy

Effect of dietary protein and energy level on growth and body composition of South African abalone, *Haliotis midae*, 156 (1997) 195

Marron (*Cherax tenuimanus*) and noble crayfish (*Astacus astacus*) hepatopancreas energy and its relationship to moisture content, 149 (1997) 157

Energy budget

Effect of body size on growth and energy budget of Nile tilapia, *Oreochromis niloticus*, 157 (1997) 25

Energy budget of Nile tilapia (*Oreochromis niloticus*) in relation to ration size, 154 (1997) 57

Energy flow model

A population dynamics model for the Japanese oyster, *Crassostrea gigas*, 149 (1997) 285

Energy metabolism

Effect of feeding frequency, feeding level and temperature on energy metabolism in *Sparus aurata*, 148 (1997) 125

Enrichment

Optimization of dietary vitamin C in fish and crustacean larvae: a review, 155 (1997) 165

The stability of docosahexaenoic acid in two *Artemia* species following enrichment and subsequent starvation, 155 (1997) 135

The use of silages prepared from fish neural tissues as enrichers for rotifers (*Brachionus plicatilis*) and *Artemia* in the nutrition of larval marine fish, 148 (1997) 213

Environmental effects

A review of the effect of genetics and environment on the maturation and larval quality of the

- giant tiger prawn *Penaeus monodon*, 155 (1997) 69
- Estimates for the heritability of size in juvenile *Penaeus monodon* prawns from half-sib matings, 152 (1997) 49
- Environmental impact**
- Regulating the local environmental impact of intensive marine fish farming. I. The concept of the MOM system (Modelling-Ongrowing fish farms-Monitoring), 158 (1997) 85
- Transient presence of oxytetracycline in blue mussels (*Mytilus edulis*) following its therapeutic use at a marine Atlantic salmon farm, 149 (1997) 175
- Enzyme activities**
- Metabolic response to feeding rates in common carp, *Cyprinus carpio*, 151 (1997) 371
- EPA/DHA ratio**
- Influence of eicosapentaenoic to docosahexaenoic acid ratio (EPA/DHA) of dietary lipids on growth and fatty acid composition of gilt-head seabream (*Sparus aurata*) juveniles, 150 (1997) 91
- Influence of the EPA/DHA ratio in rotifers on gilt-head seabream (*Sparus aurata*) larval development, 150 (1997) 77
- Epicardial fat steatitis**
- Spontaneous steatitis of epicardial fat in farmed white sturgeon (*Acipenser transmontanus*), 158 (1997) 167
- Epifluorescence**
- Nutritional potentialities of *Chlamydomonas coccooides* and *Thalassiosira fluviatilis*, as measured by their ingestion and digestion rates by the Queen Conch larvae (*Strombus gigas*), 156 (1997) 9
- Epinephelus sp.**
- Nutrient requirements of marine food fish cultured in Southeast Asia, 151 (1997) 283
- Epizootiology**
- Epizootiological aspects of *Streptococcus iniae* affecting tilapia in Texas, 152 (1997) 25
- Essential fatty acid metabolism**
- The stability of docosahexaenoic acid in two *Artemia* species following enrichment and subsequent starvation, 155 (1997) 135
- Eurasian perch**
- Influence of feeding level on growth, intraspecific weight variability and sexual growth dimorphism of Eurasian perch *Perca fluviatilis* L. reared in a recirculation system, 157 (1997) 1
- European eel (*Anguilla anguilla* L.)**
- Sex differentiation, changes in length, weight and eye size before and after metamorphosis of European eel (*Anguilla anguilla* L.) maintained in captivity, 153 (1997) 151
- European eel (*Anguilla anguilla* L.)**
- Gonadal differentiation, intersexuality and sex ratios of European eel (*Anguilla anguilla* L.) maintained in captivity, 153 (1997) 135
- Exclosure experiment**
- Benthic metabolism and the effects of bioturbation in a fertilised polyculture fish pond in northeast Thailand, 150 (1997) 45
- Exogenous feeding**
- Larval behaviour and effect of the timing of initial feeding on growth and survival of Siberian sturgeon (*Acipenser baeri*) larvae under small scale hatchery production, 156 (1997) 63
- Exponential model**
- An empirical model for predicting degradation of organic solids in fish culture systems based on short-term observations, 154 (1997) 173
- External lesions**
- Yellow pigmented filamentous bacteria connected with farmed salmonid fish mortality, 149 (1997) 1
- Extracellular products**
- Early weaning of seabass larvae, *Dicentrarchus labrax*: the effect on microbiota, with particular attention to iron supply and exoenzymes, 158 (1997) 117
- Eyestalk ablation**
- Reproduction and molt in previously spawned and first-time spawning red-claw crayfish *Cherax quadricarinatus* females following eye-

stalk ablation during the winter reproductive-arrest period, 156 (1997) 101

Faeces

Influence of differential movement of the marker chromic oxide and nutrients on digestibility estimations in the Australian freshwater crayfish *Cherax destructor*, 154 (1997) 323

Farmed

Salmonella spp. in free-ranging and farmed alligators (*Alligator mississippiensis*) from Texas and Louisiana, U.S.A., 156 (1997) 179

Farming

Mass cultivation of the agar-producing alga *Gracilaria chilensis* (Rhodophyta) from spores, 148 (1997) 77

Farming trials in villages

Survival and growth of juvenile fluted giant clams, *Tridacna squamosa*, in large-scale grow-out trials in the Solomon Islands, 148 (1997) 85

Fat

Replacement of protein by fat and carbohydrate in diets for atlantic salmon (*Salmo salar*) at the end of the freshwater stage, 152 (1997) 167

Fats and fatty compounds

Influence of eicosapentaenoic to docosahexaenoic acid ratio (EPA/DHA) of dietary lipids on growth and fatty acid composition of gilthead seabream (*Sparus aurata*) juveniles, 150 (1997) 91

Quantitative requirements of linolenic and docosahexaenoic acid for juvenile *Penaeus monodon*, 157 (1997) 277

Fatty acid

Effects of variation in essential fatty acids in fish feeds on nutritive value of freshwater fish for humans, 151 (1997) 97

Growth and fatty acid composition of Pacific oyster (*Crassostrea gigas*) spat fed a spray-dried freshwater microalga (*Spongiococcum eccentricum*) and microencapsulated lipids, 154 (1997) 293

The effect of dietary protein and lipid from squid and fish meals on egg quality of brood-

stock for gilthead seabream (*Sparus aurata*), 148 (1997) 233

Fatty acid composition

Growth response and fatty acid composition of juvenile *Penaeus vannamei* fed different sources of dietary lipid, 151 (1997) 143

Nutritional properties of microalgae for mariculture, 151 (1997) 315

Fatty acids

Changes in the fatty acid profiles of hybrid red tilapia, *Oreochromis mossambicus* × *O. niloticus*, subjected to short-term starvation, and a comparison with changes in seawater raised fish, 153 (1997) 273

Growth and fatty acid composition of juvenile leader prawns, *Penaeus monodon*, fed different lipids, 151 (1997) 131

The lipid composition of sealoch sediments underlying salmon cages, 158 (1997) 69

The potential of certain indigenous copepod species as live food for commercial fish larval rearing, 151 (1997) 351

The significance of lipids at early stages of marine fish: a review, 155 (1997) 103

Feed additives

Identification of feed enhancers for juvenile largemouth bass *Micropterus salmoides*, 148 (1997) 191

Feed attractants

The mode of action of *Artemia* in enhancing utilization of microdiet by gilthead seabream *Sparus aurata* larvae, 155 (1997) 193

Feed conversion

Replacement of protein by fat and carbohydrate in diets for atlantic salmon (*Salmo salar*) at the end of the freshwater stage, 152 (1997) 167

Feed efficiency

Feed intake and growth of Atlantic halibut (*Hippoglossus hippoglossus* L.) fed combinations of pellet sizes, 156 (1997) 1

Influence of fish meal quality and feed pellet on growth, feed efficiency and muscle composition

in gilthead seabream (*Sparus aurata*), 153 (1997) 251

The impact of raw material freshness and processing temperature for fish meal on growth, feed efficiency and chemical composition of Atlantic halibut (*Hippoglossus hippoglossus*), 149 (1997) 87

Feed-grade enzymes

Effects of enzyme addition to canola meal in prawn diets, 151 (1997) 29

Feeding

A preliminary evaluation of cacao husks in practical diets for juvenile Nile tilapia (*Oreochromis niloticus*), 156 (1997) 211

Changes in oxytetracycline resistance of intestinal microflora following oral administration of this agent to Atlantic Salmon (*Salmo salar* L.) smolts in a marine environment, 157 (1997) 187

Co-feeding marine fish larvae with inert and live diets, 155 (1997) 183

Influence of salinity on food consumption, growth and energy conversion efficiency of common carp (*Cyprinus carpio*) fingerlings, 148 (1997) 115

Priorities during early growth of fish larvae, 155 (1997) 249

Survival and growth rates of post-larval abalone *Haliotis discus hannai* fed conspecific trail mucus and/or benthic diatom *Cocconeis scutellum* var. *parva*, 152 (1997) 129

The use of behavioural observations in the larviculture of cold-water marine fish, 155 (1997) 297

Use of artificial grazing substrates in bullfrog tadpole culture, 152 (1997) 91

Feeding and nutrition

Influence of eicosapentaenoic to docosahexaenoic acid ratio (EPA/DHA) of dietary lipids on growth and fatty acid composition of gilt-head seabream (*Sparus aurata*) juveniles, 150 (1997) 91

Feeding and nutrition (fish)

Feed intake and growth of Atlantic halibut (*Hippoglossus hippoglossus* L.) fed combinations of pellet sizes, 156 (1997) 1

Feeding and nutrition—fish

Detecting growth in gilthead seabream, *Sparus aurata* L., larvae fed microcapsules, 153 (1997) 93

Feeding and nutrition, larval rearing

The use of freeze-dried krill to feed train large-mouth bass (*Micropterus salmoides*): feeds and training strategies, 148 (1997) 299

Feeding and nutrition, new feeds

The use of freeze-dried krill to feed train large-mouth bass (*Micropterus salmoides*): feeds and training strategies, 148 (1997) 299

Feeding and nutrition of crustaceans

Quantitative requirements of linolenic and docosahexaenoic acid for juvenile *Penaeus monodon*, 157 (1997) 277

Feeding behavior

Enhancement of growth in juvenile freshwater prawns, *Macrobrachium rosenbergii*, through the use of a chemoattractant, 156 (1997) 221

Feeding behaviour

Food ingestion and assimilation by the Southern brown shrimp *Penaeus subtilis* under semi-intensive culture in NE Brazil, 149 (1997) 121

Feeding frequency

Effect of feeding frequency, feeding level and temperature on energy metabolism in *Sparus aurata*, 148 (1997) 125

Management of size variation in juvenile gilt-head sea bream (*Sparus aurata*). I: Particle size and frequency of feeding dry and live food, 152 (1997) 181

Feeding habits

Food ingestion and assimilation by the Southern brown shrimp *Penaeus subtilis* under semi-intensive culture in NE Brazil, 149 (1997) 121

Feeding level

Effect of feeding frequency, feeding level and temperature on energy metabolism in *Sparus aurata*, 148 (1997) 125

Influence of feeding level on growth, intraspecific weight variability and sexual growth dimorphism of Eurasian perch *Perca fluviatilis* L. reared in a recirculation system, 157 (1997) 1

Larval rearing of the grouper *Epinephelus suillus* under laboratory conditions, 150 (1997) 63

Feeding rates

Control of growth and adiposity of juvenile chinook salmon (*Oncorhynchus tshawytscha*), 157 (1997) 311

Metabolic response to feeding rates in common carp, *Cyprinus carpio*, 151 (1997) 371

Feeding regimes

Influence of the length of the daily feeding period on feed intake and growth of whitefish, *Coregonus lavaretus*, 156 (1997) 35

Feeding stimuli

The mode of action of *Artemia* in enhancing utilization of microdiet by gilthead seabream *Sparus aurata* larvae, 155 (1997) 193

Feeding strategies

Feed preparation and feed management strategies within semi-intensive fish farming systems in the tropics, 151 (1997) 379

Feeding strategy

Effect of feeding strategy and carbohydrate source on carbohydrate utilization by white sturgeon (*Acipenser transmontanus*) and hybrid tilapia (*Oreochromis niloticus* × *O. aureus*), 148 (1997) 201

Feed intake

Feed intake and growth of Atlantic halibut (*Hippoglossus hippoglossus* L.) fed combinations of pellet sizes, 156 (1997) 1

Identification of feed enhancers for juvenile largemouth bass *Micropterus salmoides*, 148 (1997) 191

Feed quality

Influence of fish meal quality and feed pellet on growth, feed efficiency and muscle composition in gilthead seabream (*Sparus aurata*), 153 (1997) 251

Feed training

The use of freeze-dried krill to feed train largemouth bass (*Micropterus salmoides*): feeds and training strategies, 148 (1997) 299

Female heterogamety

Evidence of female heterogamety, B-chromosome and natural tetraploidy in the Asian catfish, *Clarias batrachus*, used in aquaculture, 149 (1997) 31

Fenbendazole

Depletion study of fenbendazole in rainbow trout (*Oncorhynchus mykiss*) after oral and bath treatment, 154 (1997) 191

Fiber

Utilization of carbohydrates in warmwater fish—with particular reference to tilapia, *Oreochromis niloticus* × *O. aureus*, 151 (1997) 79

Field testing

The efficacy of lipopolysaccharide mixed chloroform-killed cell (LPS-CKC) bacterin of *Pasteurella piscicida* on Yellowtail, *Seriola quinqueradiata*, 154 (1997) 95

Filtration rate

A population dynamics model for the Japanese oyster, *Crassostrea gigas*, 149 (1997) 285

Fin erosion

The effect of diet on dorsal fin erosion in steelhead trout (*Oncorhynchus mykiss*), 156 (1997) 229

Fingerlings

Influence of salinity on food consumption, growth and energy conversion efficiency of common carp (*Cyprinus carpio*) fingerlings, 148 (1997) 115

First feeding

Protein and carbon utilization of rotifers (*Brachionus plicatilis*) in first feeding of turbot larvae (*Scophthalmus maximus* L.), 153 (1997) 103

First-feeding

A review of the nutritional effects of algae in marine fish larvae, 155 (1997) 207

Fish

Effects of docosahexaenoic acid and phospholipids on stress tolerance of fish, 155 (1997) 129

Effects of growth hormone treatment on oxygen consumption and sea water adaptability in Atlantic salmon parr and pre-smolts, 148 (1996) 49

Larviculture of marine fish for sea ranching purposes: is it profitable?, 155 (1997) 341

Optimization of dietary vitamin C in fish and crustacean larvae: a review, 155 (1997) 165

Review on the dietary effects of phospholipids in fish and crustacean larviculture, 155 (1997) 149

Fish cages

Biofouling of fish-cage netting: efficacy and problems of in situ cleaning, 152 (1997) 77

Fish cell line

A continuous cell line from the cultured marine fish gilt-head seabream (*Sparus aurata* L.), 150 (1997) 143

Fish dietary requirements

Influence of eicosapentaenoic to docosahexaenoic acid ratio (EPA/DHA) of dietary lipids on growth and fatty acid composition of gilt-head seabream (*Sparus aurata*) juveniles, 150 (1997) 91

Fish eggs

Blastomere morphology as a predictive measure of fish egg viability, 155 (1997) 1

Safety of formalin treatments on warm- and coolwater fish eggs, 149 (1997) 183

Fish farming

Environmental risk from dissolved ivermectin to marine organisms, 158 (1997) 263

Regulating the local environmental impact of intensive marine fish farming. I. The concept of the MOM system (Modelling-Ongrowing fish farms-Monitoring), 158 (1997) 85

Fish farms

Transient presence of oxytetracycline in blue mussels (*Mytilus edulis*) following its therapeutic use at a marine Atlantic salmon farm, 149 (1997) 175

Fish feed

Effects of variation in essential fatty acids in fish feeds on nutritive value of freshwater fish for humans, 151 (1997) 97

Fish larvae

A review of the nutritional effects of algae in marine fish larvae, 155 (1997) 207

Early weaning of seabass larvae, *Dicentrarchus labrax*: the effect on microbiota, with particular attention to iron supply and exoenzymes, 158 (1997) 117

Priorities during early growth of fish larvae, 155 (1997) 249

The significance of lipids at early stages of marine fish: a review, 155 (1997) 103

Fish larval rearing

The potential of certain indigenous copepod species as live food for commercial fish larval rearing, 151 (1997) 351

Fish larviculture

Growth and survival of larval snakehead (*Channa striatus*) fed different diets, 148 (1997) 105

Fish meal

Identification of feed enhancers for juvenile largemouth bass *Micropterus salmoides*, 148 (1997) 191

The impact of raw material freshness and processing temperature for fish meal on growth, feed efficiency and chemical composition of Atlantic halibut (*Hippoglossus hippoglossus*), 149 (1997) 87

Fish mortality

Yellow pigmented filamentous bacteria connected with farmed salmonid fish mortality, 149 (1997) 1

Fish mycoses

Barley straw inhibits growth of some aquatic saprolegniaceous fungi, 156 (1997) 157

Fish nutrition

Different concentrations of ascorbyl-2-monophosphate-magnesium as dietary sources of vitamin C for seabass, *Lates calcarifer*, 151 (1997) 225

Effects of different levels of vitamin K in diets for cod (*Gadus morhua*), 151 (1997) 269

Evaluation of poultry-feather meal as a dietary protein source for Indian major carp, *Labeo rohita* fry, 151 (1997) 47

Evaluation of some plant ingredients as dietary protein sources for common carp (*Cyprinus carpio* L.) fry, 151 (1997) 55

Formulation of cost-effective feeds from locally available ingredients for carp polyculture system for increased production, 151 (1997) 71

Growth and body composition of juvenile red drum (*Sciaenops ocellatus*) fed diets containing lecithin and supplemental choline, 151 (1997) 259

Lipid digestion in turbot (*Scophthalmus maximus*): in-vivo and in-vitro studies of the lipolytic activity in various segments of the digestive tract, 151 (1997) 155

Metabolic response to feeding rates in common carp, *Cyprinus carpio*, 151 (1997) 371

Nutrient digestibility coefficients of some plant and animal proteins for rohu (*Labeo rohita*), 151 (1997) 37

Nutrient requirements of marine food fish cultured in Southeast Asia, 151 (1997) 283

Plasma amino acids in rainbow trout (*Oncorhynchus mykiss*) fed intact protein or a crystalline amino acid diet, 151 (1997) 15

Re-evaluation of protein and amino acid requirements of rainbow trout (*Oncorhynchus mykiss*), 151 (1997) 3

Stability and bioavailability of vitamin C-glucose in *Clarias* hybrid catfish (*Clarias gariepinus* × *Clarias macrocephalus*), 151 (1997) 219

The effects of dietary fat content on performance and body composition of farmed rainbow trout (*Oncorhynchus mykiss*), 151 (1997) 173

Trace minerals in fish nutrition, 151 (1997) 185

Usefulness of *Ascophyllum* meal as a feed additive for red sea bream, *Pagrus major*, 151 (1997) 275

Utilization of carbohydrates in warmwater fish—with particular reference to tilapia, *Oreochromis niloticus* × *O. aureus*, 151 (1997) 79

Fish viruses

A continuous cell line from the cultured marine fish gilt-head seabream (*Sparus aurata* L.), 150 (1997) 143

Flavobacterium psychrophilum

Minimum inhibitory concentrations of selected antimicrobial compounds against *Flavobacterium psychrophilum* the causal agent of rainbow trout fry syndrome (RTFS), 158 (1997) 193

***Flavobacterium* spp.**

Yellow pigmented filamentous bacteria connected with farmed salmonid fish mortality, 149 (1997) 1

Flounder

Spawning and larval husbandry of flounder (*Paralichthys woolmani*) and Pacific yellowtail (*Seriola mazatlanensis*), new candidate species for aquaculture, 155 (1997) 307

The establishment and partial characterization of a continuous fish cell line FG-9307 from the gill of flounder *Paralichthys olivaceus*, 156 (1997) 327

Flow cytometry

Preingestive selection of different microalgal mixtures in *Crassostrea gigas* and *Mytilus edulis*, analysed by flow cytometry, 150 (1997) 123

Flumequine

Single dose pharmacokinetic study of flumequine after intravenous, intraperitoneal and oral administration to Atlantic halibut (*Hippoglossus hippoglossus*) held in seawater at 9°C, 158 (1997) 215

Tissue distribution and depletion of flumequine after in-feed administration in sea bream (*Sparus aurata*), 157 (1997) 197

Food availability

Effects of trophic and environmental conditions on the growth of *Crassostrea gigas* in culture, 153 (1997) 81

Food-competition

Ration and spatial distribution of feed affect survival, growth, and competition in juvenile red-claw crayfish, *Cherax quadricarinatus*, reared in the laboratory, 148 (1997) 169

Food concentration

Effects of diets and feeding rate on the survival and growth of Macquarie perch (*Macquaria australasica*) larvae, a threatened Australian native fish, 157 (1997) 35

Food consumption

Influence of salinity on food consumption, growth and energy conversion efficiency of common carp (*Cyprinus carpio*) fingerlings, 148 (1997) 115

Food efficiency

Chronic ammonia toxicity in juvenile turbot (*Scophthalmus maximus*), 154 (1997) 155

Food intake

Anorexia in one-sea-winter Atlantic salmon (*Salmo salar*) during summer, associated with sexual maturation, 151 (1997) 405

Food webs

The role of microorganisms in aquaculture ponds, 151 (1997) 333

Formalin

Safety of formalin treatments on warm- and coolwater fish eggs, 149 (1997) 183

Formulated feed

Effect of temperature on growth, feed consumption and nutritional indices of *Haliotis midae* fed a formulated diet, 152 (1997) 191

Growth and survival of larval snakehead (*Channa striatus*) fed different diets, 148 (1997) 105

Fouling

Fouling animals and their effect on the growth of silver-lip pearl oysters, *Pinctada maxima* (Jameson) in suspended culture, 153 (1997) 31

Free amino acid

Effects of dietary pyridoxine and protein levels on growth, vitamin B₆ content, and free amino acid profile of juvenile *Penaeus japonicus*, 157 (1997) 263

Free-ranging

Salmonella spp. in free-ranging and farmed alligators (*Alligator mississippiensis*) from Texas and Louisiana, U.S.A., 156 (1997) 179

Freeze-dried microalgae

Evaluation of freeze-dried microalgal diets for the seed culture of *Ruditapes decussatus* using physiological and biochemical parameters, 154 (1997) 305

Freshness

The impact of raw material freshness and processing temperature for fish meal on growth, feed efficiency and chemical composition of Atlantic halibut (*Hippoglossus hippoglossus*), 149 (1997) 87

Freshwater fish

Effects of variation in essential fatty acids in fish feeds on nutritive value of freshwater fish for humans, 151 (1997) 97

Freshwater teleost

Influence of age on digestive enzyme activity in some freshwater teleosts, 148 (1996) 25

Fry production systems

Bioeconomic evaluation of different fry production systems for milkfish (*Chanos chanos*), 155 (1997) 367

Full-fat soybean meal

Quality parameters of the flesh of Atlantic salmon (*Salmo salar*) as affected by dietary fat content and full-fat soybean meal as a partial substitute for fish meal in the diet, 157 (1997) 297

Fungal infection

Safety of formalin treatments on warm- and coolwater fish eggs, 149 (1997) 183

Fungi

Use of prophylactic treatments for larval rearing of giant crabs *Pseudocarcinus gigas* (Lamarck), 158 (1997) 203

Gadua morhua

Effects of different levels of vitamin K in diets for cod (*Gadus morhua*), 151 (1997) 269

Garonne Basin (Fr.)

Gonadal differentiation, intersexuality and sex ratios of European eel (*Anguilla anguilla* L.) maintained in captivity, 153 (1997) 135

Sex differentiation, changes in length, weight and eye size before and after metamorphosis of European eel (*Anguilla anguilla* L.) maintained in captivity, 153 (1997) 151

Gastropod

Hydrogen peroxide induced metamorphosis of queen conch, *Strombus gigas*: Tests at the commercial scale, 148 (1997) 247

Genetic correlation

Genetic and environmental variation of female reproductive traits in rainbow trout (*Oncorhynchus mykiss*), 154 (1997) 115

Genetic differentiation

Genetic variation within and among Danish brown trout (*Salmo trutta* L.) hatchery strains, assessed by PCR-RFLP analysis of mitochondrial DNA segments, 153 (1997) 15

Genetic diversity

Application of the microsatellite technique for analyzing genetic diversity in shrimp breeding programs, 152 (1997) 35

Genetic Markers

Inheritance of RAPD markers and detection of interspecific hybridization with brown trout and Atlantic salmon, 152 (1997) 55

Genetic parameters

Egg, larval, and fingerling traits of crosses among striped bass (*Morone saxatilis*), white bass (*M. chrysops*), and their F1 hybrids, 154 (1997) 201

Genetics

A review of the effect of genetics and environment on the maturation and larval quality of the giant tiger prawn *Penaeus monodon*, 155 (1997) 69

Assessment of genetic variability among strains of rainbow and cutthroat trout using multilocus DNA fingerprints, 149 (1997) 47

Estimates for the heritability of size in juvenile *Penaeus monodon* prawns from half-sib matings, 152 (1997) 49

Genetic analysis of testis development in all-male F1 hybrid strains of common carp, *Cyprinus carpio*, 158 (1997) 33

Genetic correlations between survival of Atlantic salmon in challenge and field tests, 158 (1997) 277

Genetic improvement of oyster production—a critique, 153 (1997) 165

Genetic variance

Distribution of genetic variance in gynogenetic or androgenetic families, 153 (1997) 225

Genetic variation

Genetic implications of broodstock selection for crayfish aquaculture in the Midwestern United States, 154 (1997) 39

Inheritance of RAPD markers and detection of interspecific hybridization with brown trout and Atlantic salmon, 152 (1997) 55

Genomic identification

Genomic identification of catfish species by polymerase chain reaction and restriction enzyme analysis of the gene encoding the immunoglobulin M heavy chain constant region, 156 (1997) 129

Genotype and environment

Genotype and environment: A comparative evaluation of four tilapia stocks in Fiji, 150 (1997) 11

GH

Effects of growth hormone treatment on oxygen consumption and sea water adaptability in Atlantic salmon parr and pre-smolts, 148 (1996) 49

Giant clam

Impacts of ectoparasitic gastropods on growth, survival, and physiology of juvenile giant clams (*Tridacna gigas*), including a simulation model of mortality and reduced growth rate, 150 (1997) 25

Giant clams

Survival and growth of juvenile fluted giant clams, *Tridacna squamosa*, in large-scale grow-out trials in the Solomon Islands, 148 (1997) 85

Gibbs sampling

Distribution of genetic variance in gynogenetic or androgenetic families, 153 (1997) 225

Gills

The effects of hydrogen peroxide on the gill tissues of Atlantic salmon, *Salmo salar* L., 153 (1997) 181

Gilthead bream

Pathological findings owing to the lack of ascorbic acid in cultured gilthead bream (*Sparus aurata* L.), 151 (1997) 209

Gilthead seabream

Influence of fish meal quality and feed pellet on growth, feed efficiency and muscle composition in gilthead seabream (*Sparus aurata*), 153 (1997) 251

Influence of the EPA/DHA ratio in rotifers on gilthead seabream (*Sparus aurata*) larval development, 150 (1997) 77

Glucan

Prevention of stress in rainbow trout (*Oncorhynchus mykiss*) fed diets containing different doses of glucan, 154 (1997) 1

Glucose

Utilization of carbohydrates in warmwater fish—with particular reference to tilapia, *Oreochromis niloticus* × *O. aureus*, 151 (1997) 79

Glutathione peroxidase

Organic selenium sources, selenomethionine and selenoyeast, have higher bioavailability than an inorganic selenium source, sodium selenite, in diets for channel catfish (*Ictalurus punctatus*), 152 (1997) 223

GnRH

Hormonal changes in male white bass (*Morone chrysops*) and evaluation of milt quality after treatment with a sustained-release GnRH α delivery system, 153 (1997) 301

GnRH agonist

Induction of spawning in gilthead seabream, *Sparus aurata* L., by a long-acting GnRH agonist and its effects on egg quality and daily timing of spawning, 154 (1997) 349

GnRH analog

Domestication of the white grouper, *Epinephelus aeneus*. 1. Growth and reproduction, 156 (1997) 305

Gracilaria chilensis

Integrated marine cultivation of *Gracilaria chilensis* (Gracilariales, Rhodophyta) and salmon cages for reduced environmental impact and increased economic output, 156 (1997) 45

Mass cultivation of the agar-producing alga *Gracilaria chilensis* (Rhodophyta) from spores, 148 (1997) 77

Gracilaria cultivation

Intertidal cultivation of *Gracilaria chilensis* (Rhodophyta) in southern Chile: long term invertebrate abundance patterns, 156 (1997) 269

Gross composition

Influence of fish meal quality and feed pellet on growth, feed efficiency and muscle composition in gilthead seabream (*Sparus aurata*), 153 (1997) 251

The impact of raw material freshness and processing temperature for fish meal on growth, feed efficiency and chemical composition of Atlantic halibut (*Hippoglossus hippoglossus*), 149 (1997) 87

Growout

Large-scale laboratory culture of the crown-of-thorns starfish *Acanthaster planci* (L.) (Echinodermata: Asteroidea), 157 (1997) 215

Growth

A re-appraisal of the potential of the sole, *Solea solea* (L.), for commercial cultivation, 155 (1997) 355

Adaptation to soybean meal in diets for rainbow trout, *Oncorhynchus mykiss*, 153 (1997) 263

Annual cycle of spawning and molting in the red-claw crayfish, *Cherax quadricarinatus*, under laboratory conditions, 157 (1997) 239

Chronic ammonia toxicity in juvenile turbot (*Scophthalmus maximus*), 154 (1997) 155

Control of growth and adiposity of juvenile chinook salmon (*Oncorhynchus tshawytscha*), 157 (1997) 311

Effect of body size on growth and energy budget of Nile tilapia, *Oreochromis niloticus*, 157 (1997) 25

Effects of diets and feeding rate on the survival and growth of Macquarie perch (*Macquaria australasica*) larvae, a threatened Australian native fish, 157 (1997) 35

Effects of stocking density on growth and survival of early juvenile silver-lip pearl oysters, *Pinctada maxima* (Jameson), held in suspended nursery culture, 153 (1997) 41

Evaluation of freeze-dried microalgal diets for the seed culture of *Ruditapes decussatus* using physiological and biochemical parameters, 154 (1997) 305

Fouling animals and their effect on the growth of silver-lip pearl oysters, *Pinctada maxima* (Jameson) in suspended culture, 153 (1997) 31

Growth and body composition of channel catfish (*Ictalurus punctatus*) fed diets containing various percentages of canola meal, 150 (1997) 103

Growth and production of Indian river prawn *Macrobrachium malcolmsonii* (H. Milne Edwards) under pond conditions, 154 (1997) 79

Growth of European sea bass fingerlings (*Dicentrarchus labrax*) fed extruded diets containing varying levels of protein, lipid and carbohydrate, 156 (1997) 183

Growth of clam seed (*Ruditapes decussatus*) reared in the wastewater effluent from a fish farm in Galicia (N.W. Spain), 158 (1997) 247

Growth of juvenile *Actinopyga mauritiana* (Holothuroidea) in captivity, 152 (1997) 119

Growth of juvenile Asian seabass, *Lates calcarifer*, fed varying carbohydrate and lipid levels, 149 (1997) 137

Growth response of juvenile *Barbodes altus* fed isocaloric diets with variable protein levels, 158 (1997) 321

Influence of feeding level on growth, intraspecific weight variability and sexual growth dimorphism of Eurasian perch *Perca fluviatilis* L. reared in a recirculation system, 157 (1997) 1

Influence of fish meal quality and feed pellet on growth, feed efficiency and muscle composition in gilthead seabream (*Sparus aurata*), 153 (1997) 251

Influence of salinity on food consumption, growth and energy conversion efficiency of common carp (*Cyprinus carpio*) fingerlings, 148 (1997) 115

Influence of the length of the daily feeding period on feed intake and growth of whitefish, *Coregonus lavaretus*, 156 (1997) 35

Larval behaviour and effect of the timing of initial feeding on growth and survival of Siberian sturgeon (*Acipenser baeri*) larvae under small scale hatchery production, 156 (1997) 63

Larval rearing of the grouper *Epinephelus suillus* under laboratory conditions, 150 (1997) 63

Pond production of pellet-fed advanced juvenile and food-size largemouth bass, 149 (1997) 253

Priorities during early growth of fish larvae, 155 (1997) 249

Quantitative methionine requirement of yellowtail (*Seriola quinqueradiata*), 150 (1997) 113

Ration and spatial distribution of feed affect survival, growth, and competition in juvenile red-claw crayfish, *Cherax quadricarinatus*, reared in the laboratory, 148 (1997) 169

- Response of the yabby, *Cherax destructor* Clark, to natural and artificial diets: phenotypic variation in juvenile growth, 149 (1997) 39
- Responses of channel catfish (*Ictalurus punctatus*) fed iron-deficient and replete diets to *Edwardsiella ictaluri* challenge, 157 (1997) 83
- Rice-fish culture: feeding, growth and yield of two size classes of *Puntius gonionotus* Bleeker and *Oreochromis* spp. in Bangladesh, 154 (1997) 261
- Survival and growth of juvenile fluted giant clams, *Tridacna squamosa*, in large-scale grow-out trials in the Solomon Islands, 148 (1997) 85
- Survival and growth rates of post-larval abalone *Haliotis discus hannai* fed conspecific trail mucus and/or benthic diatom *Cocconeis scutellum* var. *parva*, 152 (1997) 129
- The effects of salinity and temperature on the growth and survival rates of juvenile white shrimp, *Penaeus vannamei*, Boone, 1931, 157 (1997) 107
- The impact of raw material freshness and processing temperature for fish meal on growth, feed efficiency and chemical composition of Atlantic halibut (*Hippoglossus hippoglossus*), 149 (1997) 87
- Growth acceleration**
Impact of a controlled release formulation of recombinant bovine growth hormone upon growth and seawater adaptation in coho (*Oncorhynchus kisutch*) and chinook (*Oncorhynchus tshawytscha*) salmon, 156 (1997) 113
- Growth and feed utilization**
Preliminary assessment of the seaweed *Porphyra purpurea* in artificial diets for thick-lipped grey mullet (*Chelon labrosus*), 152 (1997) 249
- Growth depensation**
Growth performance in clonal crucian carp, *Carassius langsdorfii*. Effects of genetic difference and feeding history, 155 (1997) 271
- Management of size variation in juvenile gilt-head sea bream (*Sparus aurata*). I: Particle size and frequency of feeding dry and live food, 152 (1997) 181
- Growth enhancer**
Enhancement of growth in juvenile freshwater prawns, *Macrobrachium rosenbergii*, through the use of a chemoattractant, 156 (1997) 221
- Growth (fish)**
Feed intake and growth of Atlantic halibut (*Hippoglossus hippoglossus* L.) fed combinations of pellet sizes, 156 (1997) 1
- Growth fish**
Influence of eicosapentaenoic to docosahexaenoic acid ratio (EPA/DHA) of dietary lipids on growth and fatty acid composition of gilt-head seabream (*Sparus aurata*) juveniles, 150 (1997) 91
- Growth hormone**
Effects of growth hormone treatment on oxygen consumption and sea water adaptability in Atlantic salmon parr and pre-smolts, 148 (1996) 49
- Growth in crustaceans**
Quantitative requirements of linolenic and docosahexaenoic acid for juvenile *Penaeus monodon*, 157 (1997) 277
- Growth-larvae**
Effects of broodstock diets on fatty acid composition, survival and growth rates in larvae of the European flat oyster, *Ostrea edulis*, 154 (1997) 139
- Growth performance**
Efficiency of utilization of some potato starch modifications by rainbow trout (*Oncorhynchus mykiss*), 152 (1997) 235
- Growth rate**
Genetic improvement of oyster production—a critique, 153 (1997) 165
- The genetic consequence of hatchery-rearing on life-history traits of the Atlantic salmon (*Salmo salar* L.): a comparative analysis of sea-ranched salmon with wild and reared parents, 153 (1997) 207

GtH

Hormonal changes in male white bass (*Morone chrysops*) and evaluation of milt quality after treatment with a sustained-release GnRHa delivery system, 153 (1997) 301

Gut bacteria

The role of bacteria in the digestion of seaweed by the abalone *Haliotis midae*, 155 (1997) 377

Gynogenesis

Distribution of genetic variance in gynogenetic or androgenetic families, 153 (1997) 225

Halibut

The impact of raw material freshness and processing temperature for fish meal on growth, feed efficiency and chemical composition of Atlantic halibut (*Hippoglossus hippoglossus*), 149 (1997) 87

Vitamin B₆ in Atlantic halibut, *Hippoglossus hippoglossus*—endogenous utilization and retention in larvae fed natural zooplankton, 157 (1997) 337

Haliotis discus hannai

Survival and growth rates of post-larval abalone *Haliotis discus hannai* fed conspecific trail mucus and/or benthic diatom *Cocconeis scutellum* var. *parva*, 152 (1997) 129

Haliotis midae

Can crystalline arginine be used to quantify the arginine requirement of abalone?, 157 (1997) 95

Effect of dietary protein and energy level on growth and body composition of South African abalone, *Haliotis midae*, 156 (1997) 195

Effect of temperature on growth, feed consumption and nutritional indices of *Haliotis midae* fed a formulated diet, 152 (1997) 191

The role of bacteria in the digestion of seaweed by the abalone *Haliotis midae*, 155 (1997) 377

Hard clam

Cryopreservation of late embryos and early larvae in the oyster and hard clam, 155 (1997) 31

Harvest

The effect of stocking density on yield, growth and mortality of African catfish (*Clarias gariepinus* Burchell 1822) cultured in cages, 152 (1997) 67

Hatchery conditioning

Techniques for the hatchery conditioning of bivalve broodstocks and the subsequent effect on egg quality and larval viability, 155 (1997) 45

Hatchery diet

Introduction of detrital food webs into an aquaculture system by supplying single cell algal detritus produced from *Laminaria japonica* as a hatchery diet for *Artemia* nauplii, 154 (1997) 125

Hatchery production

A review of the effect of genetics and environment on the maturation and larval quality of the giant tiger prawn *Penaeus monodon*, 155 (1997) 69

Estimates for the heritability of size in juvenile *Penaeus monodon* prawns from half-sib matings, 152 (1997) 49

Hatchery strain

Genetic variation within and among Danish brown trout (*Salmo trutta* L.) hatchery strains, assessed by PCR-RFLP analysis of mitochondrial DNA segments, 153 (1997) 15

Health risk

Transient presence of oxytetracycline in blue mussels (*Mytilus edulis*) following its therapeutic use at a marine Atlantic salmon farm, 149 (1997) 175

Hematology

Responses of channel catfish (*Ictalurus punctatus*) fed iron-deficient and replete diets to *Edwardsiella ictaluri* challenge, 157 (1997) 83

Hepatopancreas

Marron (*Cherax tenuimanus*) and noble crayfish (*Astacus astacus*) hepatopancreas energy and its relationship to moisture content, 149 (1997) 157

Heritability

Genetic and environmental variation of female reproductive traits in rainbow trout (*Oncorhynchus mykiss*), 154 (1997) 115

Heterozygosity

Application of the microsatellite technique for analyzing genetic diversity in shrimp breeding programs, 152 (1997) 35

High fat diets

The effects of dietary fat content on performance and body composition of farmed rainbow trout (*Oncorhynchus mykiss*), 151 (1997) 173

Hippoglossus

Effects of temperature on yolk sac larvae of Atlantic halibut (*Hippoglossus hippoglossus* L.), 157 (1997) 123

Hippoglossus

Effects of salinity on yolk sac larvae of Atlantic halibut (*Hippoglossus hippoglossus* L.), 156 (1997) 291

Hippoglossus hippoglossus

Blastomere morphology as a predictive measure of fish egg viability, 155 (1997) 1

Hormones

Domestication of the white grouper, *Epinephelus aeneus*. 1. Growth and reproduction, 156 (1997) 305

LHRHa and pimozone-induced spawning of Asian catfish *Clarias macrocephalus* (Gunther) at different times during an annual reproductive cycle, 148 (1997) 323

HpaI

Genomic identification of catfish species by polymerase chain reaction and restriction enzyme analysis of the gene encoding the immunoglobulin M heavy chain constant region, 156 (1997) 129

(n - 3) HUFA

The stability of docosahexaenoic acid in two *Artemia* species following enrichment and subsequent starvation, 155 (1997) 135

n - 3 HUFA

A review of the nutritional effects of algae in marine fish larvae, 155 (1997) 207

Effect of dietary phospholipid on requirements for and incorporation of *n* - 3 highly unsaturated fatty acids in postlarval *Penaeus japonicus* Bate, 158 (1997) 305

Human chorionic gonadotropin

Relationship between serum levels of human chorionic gonadotropin (hCG) and 11-keto-testosterone after a single injection of hCG and induced maturity in the male Japanese eel, *Anguilla japonica*, 153 (1997) 123

Human health

Effects of variation in essential fatty acids in fish feeds on nutritive value of freshwater fish for humans, 151 (1997) 97

Hybridization

Evaluating hybridization potential between *Penaeus setiferus* and *Penaeus vannamei* through natural mating, artificial insemination and in vitro fertilization, 150 (1997) 1

Inheritance of RAPD markers and detection of interspecific hybridization with brown trout and Atlantic salmon, 152 (1997) 55

Hybrids

Egg, larval, and fingerling traits of crosses among striped bass (*Morone saxatilis*), white bass (*M. chrysops*), and their F1 hybrids, 154 (1997) 201

Hydrogen peroxide

Hydrogen peroxide induced metamorphosis of queen conch, *Strombus gigas*: Tests at the commercial scale, 148 (1997) 247

The effects of hydrogen peroxide on the gill tissues of Atlantic salmon, *Salmo salar* L., 153 (1997) 181

The efficacy of hydrogen peroxide for the treatment of farmed Atlantic salmon, *Salmo salar* L. infested with sea lice (Copepoda: Caligidae), 148 (1997) 265

Ichthyophthirius multifiliis

Protection of goldfish against *Ichthyophthirius multifiliis* by immunization with a recombinant vaccine, 158 (1997) 1

Idoxanthin

Idoxanthin, a major carotenoid in the flesh of Arctic charr (*Salvelinus alpinus*) fed diets containing astaxanthin, 150 (1997) 135

Illuminated cage nursery

Effects of different illumination levels on zooplankton abundance, feeding periodicity, growth and survival of the Asian sea bass, *Lates calcarifer* (Bloch), fry in illuminated floating nursery cages, 157 (1997) 227

Image analysis

The effects of experimental starter diets with different levels of soybean or menhaden oil on red drum (*Sciaenops ocellatus*), 149 (1997) 323

Immune indicators

Non-specific immune responses in the red porgy *Pagrus pagrus* after crowding stress, 156 (1997) 279

Immune protection

Protection of goldfish against *Ichthyophthirius multifiliis* by immunization with a recombinant vaccine, 158 (1997) 1

Immune response

Responses of channel catfish (*Ictalurus punctatus*) fed iron-deficient and replete diets to *Edwardsiella ictaluri* challenge, 157 (1997) 83

Vaccination improves survival of Baltic salmon (*Salmo salar*) smolts in delayed release sea ranching (net-pen period), 156 (1997) 335

Immunoassays

Characterization of core-oligosaccharide- and O-polysaccharide-specific monoclonal antibodies against *Aeromonas salmonicida* LPS binding to typical and atypical *Aeromonas salmonicida* isolates, 157 (1997) 157

Immunology

The use of immunostimulation in marine larviculture: possibilities and challenges, 155 (1997) 401

Immunostimulation

The use of immunostimulation in marine larviculture: possibilities and challenges, 155 (1997) 401

Inclusion

Apparent digestibility of tuna oil for common carp, *Cyprinus carpio* - effect of inclusion level and adaptation time, 148 (1997) 143

Indian major carp

Evaluation of poultry-feather meal as a dietary protein source for Indian major carp, *Labeo rohita* fry, 151 (1997) 47

Indigenous feed

Low-cost feed for *Penaeus monodon* reared in tanks and under semi-intensive and intensive conditions in brackishwater ponds, 154 (1997) 69

Induced spawning

Induction of spawning in gilthead seabream, *Sparus aurata* L., by a long-acting GnRH agonist and its effects on egg quality and daily timing of spawning, 154 (1997) 349

Notes on the induced spawning, embryonic and larval development of the window-pane shell, *Placuna placenta* (Linnaeus, 1758), in the laboratory, 157 (1997) 137

Infectious Salmon Anaemia

Genetic correlations between survival of Atlantic salmon in challenge and field tests, 158 (1997) 277

Infectivity studies

Age at first infection of *Cherax quadricarinatus* by *Cherax quadricarinatus* bacilliform virus and *Cherax* *Giardiavirus*-like virus, and production of putative virus-free crayfish, 152 (1997) 1

Ingestion

The mode of action of *Artemia* in enhancing utilization of microdiet by gilthead seabream *Sparus aurata* larvae, 155 (1997) 193

Intersexuality

Gonadal differentiation, intersexuality and sex ratios of European eel (*Anguilla anguilla* L.) maintained in captivity, 153 (1997) 135

Intestinal microflora

Changes in oxytetracycline resistance of intestinal microflora following oral administration of this agent to Atlantic Salmon (*Salmo salar* L.) smolts in a marine environment, 157 (1997) 187

Intestinal microflora-fish

Dominant intestinal microflora of sea bream and sea bass larvae, from two hatcheries, during larval development, 155 (1997) 387

Intra-abdominal marker

Post-vaccination intra-abdominal adhesions as a marker to identify Atlantic salmon, *Salmo salar* L., escaped from commercial fish farms, 154 (1997) 27

Intraperitoneal

Single dose pharmacokinetic study of flumequine after intravenous, intraperitoneal and oral administration to Atlantic halibut (*Hippoglossus hippoglossus*) held in seawater at 9°C, 158 (1997) 215

Intravenous

Single dose pharmacokinetic study of flumequine after intravenous, intraperitoneal and oral administration to Atlantic halibut (*Hippoglossus hippoglossus*) held in seawater at 9°C, 158 (1997) 215

In vitro

pH-stat method to predict protein digestibility in white shrimp (*Penaeus vannamei*), 157 (1997) 251

In vitro fertilization

Evaluating hybridization potential between *Penaeus setiferus* and *Penaeus vannamei* through natural mating, artificial insemination and in vitro fertilization, 150 (1997) 1

In vivo

pH-stat method to predict protein digestibility in white shrimp (*Penaeus vannamei*), 157 (1997) 251

Ion regulation

Chronic ammonia toxicity in juvenile turbot (*Scophthalmus maximus*), 154 (1997) 155

IPNV

Susceptibility to furunculosis, cold water vibriosis, and infectious pancreatic necrosis (IPN) in post-smolt Atlantic salmon (*Salmo salar* L.) as a function of smolt status by seawater transfer, 158 (1997) 179

Iron

Trace minerals in fish nutrition, 151 (1997) 185

Ivermectin

Environmental risk from dissolved ivermectin to marine organisms, 158 (1997) 263

Jasus

Application of ecosystem culture method for complete development of phyllosomas of spiny lobster, 155 (1997) 319

Juvenile

Review on the dietary effects of phospholipids in fish and crustacean larviculture, 155 (1997) 149

Juvenile cost

Larviculture of marine fish for sea ranching purposes: is it profitable?, 155 (1997) 341

Juveniles

A re-appraisal of the potential of the sole, *Solea solea* (L.), for commercial cultivation, 155 (1997) 355

Influence of eicosapentaenoic to docosahexaenoic acid ratio (EPA/DHA) of dietary lipids on growth and fatty acid composition of gilt-head seabream (*Sparus aurata*) juveniles, 150 (1997) 91

Survival and growth of juvenile fluted giant clams, *Tridacna squamosa*, in large-scale grow-out trials in the Solomon Islands, 148 (1997) 85

Karyotype

Karyotypes and Ag-NORs of the mussels *Mytilus californianus* and *M. trossulus* from the Pacific Canadian coast, 153 (1997) 239

Kidney pathology

Pathological findings owing to the lack of ascorbic acid in cultured gilthead bream (*Sparus aurata* L.), 151 (1997) 209

Krill meal

Effects of initial weight and genetic strain on feed training largemouth bass *Micropterus salmoides* using ground fish flesh and freeze dried krill as starter diets, 148 (1997) 179

Kudoa thyrsites

Evaluation of a nondestructive diagnostic test for *Kudoa thyrsites* in farmed Atlantic salmon (*Salmo salar*), 156 (1997) 139

Labeo rohita

Evaluation of poultry-feather meal as a dietary protein source for Indian major carp, *Labeo rohita* fry, 151 (1997) 47

Nutrient digestibility coefficients of some plant and animal proteins for rohu (*Labeo rohita*), 151 (1997) 37

Laminaria japonica

Introduction of detrital food webs into an aquaculture system by supplying single cell algal detritus produced from *Laminaria japonica* as a hatchery diet for *Artemia* nauplii, 154 (1997) 125

Largemouth bass

Effects of initial weight and genetic strain on feed training largemouth bass *Micropterus salmoides* using ground fish flesh and freeze dried krill as starter diets, 148 (1997) 179

Identification of feed enhancers for juvenile largemouth bass *Micropterus salmoides*, 148 (1997) 191

Pond production of pellet-fed advanced juvenile and food-size largemouth bass, 149 (1997) 253

The use of freeze-dried krill to feed train largemouth bass (*Micropterus salmoides*): feeds and training strategies, 148 (1997) 299

Larva

Effects of salinity on yolk sac larvae of Atlantic halibut (*Hippoglossus hippoglossus* L.), 156 (1997) 291

Nutritional value of soy protein concentrate for larvae of common carp (*Cyprinus carpio*) based on growth performance and digestive enzyme activities, 153 (1997) 63

Review on the dietary effects of phospholipids in fish and crustacean larviculture, 155 (1997) 149

Larvae

A re-appraisal of the potential of the sole, *Solea solea* (L.), for commercial cultivation, 155 (1997) 355

Cryopreservation of late embryos and early larvae in the oyster and hard clam, 155 (1997) 31

Effects of live food and dietary digestive enzymes on the efficiency of microdiets for seabass (*Dicentrarchus labrax*) larvae, 148 (1997) 313

Hydrogen peroxide induced metamorphosis of queen conch, *Strombus gigas*: Tests at the commercial scale, 148 (1997) 247

Influence of the EPA/DHA ratio in rotifers on gilthead seabream (*Sparus aurata*) larval development, 150 (1997) 77

Larval behaviour and effect of the timing of initial feeding on growth and survival of Siberian sturgeon (*Acipenser baeri*) larvae under small scale hatchery production, 156 (1997) 63

Nutritional potentialities of *Chlamydomonas coccoides* and *Thalassiosira fluviatilis*, as measured by their ingestion and digestion rates by the Queen Conch larvae (*Strombus gigas*), 156 (1997) 9

Protein and carbon utilization of rotifers (*Brachionus plicatilis*) in first feeding of turbot larvae (*Scophthalmus maximus* L.), 153 (1997) 103

The opercular complex deformity in intensive gilthead sea bream (*Sparus aurata* L.) larviculture. Moment of apparition and description, 156 (1997) 165

Vitamin B₆ in Atlantic halibut, *Hippoglossus hippoglossus*—endogenous utilization and retention in larvae fed natural zooplankton, 157 (1997) 337

Larvae nutrition

The effect of supplemental ascorbic acid in enriched live food for *Clarias gariepinus* larvae at startfeeding, 151 (1997) 245

Larval culture

Large-scale laboratory culture of the crown-of-thorns starfish *Acanthaster planci* (L.) (Echinodermata: Asteroidea), 157 (1997) 215

Potential probiotic strains in the culture of the Chilean scallop *Argopecten purpuratus* (Lamarck, 1819), 154 (1997) 17

Larval development

Effects of temperature on yolk sac larvae of Atlantic halibut (*Hippoglossus hippoglossus* L.), 157 (1997) 123

Large-scale laboratory culture of the crown-of-thorns starfish *Acanthaster planci* (L.) (Echinodermata: Asteroidea), 157 (1997) 215

Larval feeding

Growth performance in clonal crucian carp, *Carassius langsdorfii*. Effects of genetic difference and feeding history, 155 (1997) 271

Larval fish

Co-feeding marine fish larvae with inert and live diets, 155 (1997) 183

Detecting growth in gilthead seabream, *Sparus aurata* L., larvae fed microcapsules, 153 (1997) 93

Larval fish and fry

The cost of growth in young fish larvae, a review of new hypotheses, 155 (1997) 259

Larval/fry behaviour

Suitability of a continuous-flow chamber for investigating fish larvae/fry growth responses, 151 (1997) 365

Larval/fry feeding

Suitability of a continuous-flow chamber for investigating fish larvae/fry growth responses, 151 (1997) 365

Larval quality

A review of the effect of genetics and environment on the maturation and larval quality of the giant tiger prawn *Penaeus monodon*, 155 (1997) 69

Estimates for the heritability of size in juvenile *Penaeus monodon* prawns from half-sib matings, 152 (1997) 49

Larval rearing

Effects of initial weight and genetic strain on feed training largemouth bass *Micropterus salmoides* using ground fish flesh and freeze dried krill as starter diets, 148 (1997) 179

Spawning and larval husbandry of flounder (*Paralichthys woolmani*) and Pacific yellowtail (*Seriola mazatlanensis*), new candidate species for aquaculture, 155 (1997) 307

The use of immunostimulation in marine larviculture: possibilities and challenges, 155 (1997) 401

Larval rearing-fish

Dominant intestinal microflora of sea bream and sea bass larvae, from two hatcheries, during larval development, 155 (1997) 387

Larval viability

Techniques for the hatchery conditioning of bivalve broodstocks and the subsequent effect on egg quality and larval viability, 155 (1997) 45

Larviculture

Optimization of dietary vitamin C in fish and crustacean larvae: a review, 155 (1997) 165

Lates calcarifer

Different concentrations of ascorbyl-2-monophosphate-magnesium as dietary sources of vitamin C for seabass, *Lates calcarifer*, 151 (1997) 225

Effects of different illumination levels on zooplankton abundance, feeding periodicity, growth and survival of the Asian sea bass, *Lates calcarifer* (Bloch), fry in illuminated floating nursery cages, 157 (1997) 227

Growth of juvenile Asian seabass, *Lates calcarifer*, fed varying carbohydrate and lipid levels, 149 (1997) 137

Nutrient requirements of marine food fish cultured in Southeast Asia, 151 (1997) 283

Lead

Effect of stocking densities on trace metal concentration in three tissues of the brown shrimp *Penaeus californiensis*, 156 (1997) 21

Lecithin

Growth and body composition of juvenile red drum (*Sciaenops ocellatus*) fed diets containing lecithin and supplemental choline, 151 (1997) 259

Requirements, presentation and sources of polyunsaturated fatty acids in marine fish larval feeds, 155 (1997) 117

Lepeophtheirus salmonis

The efficacy of hydrogen peroxide for the treatment of farmed Atlantic salmon, *Salmo salar* L. infested with sea lice (Copepoda: Caligidae), 148 (1997) 265

Life forms

A comparison of the known life forms of *Psorospermium* spp. in freshwater crayfish (Arthropoda, decapoda) with emphasis on *Astacus astacus* L. (Astacidae) and *Procambarus clarkii* (Girard) (Cambaridae), 149 (1997) 15

Light intensity

Effects of different illumination levels on zooplankton abundance, feeding periodicity, growth and survival of the Asian sea bass, *Lates calcarifer* (Bloch), fry in illuminated floating nursery cages, 157 (1997) 227

Lipid

Apparent digestibility of tuna oil for common carp, *Cyprinus carpio* – effect of inclusion level and adaptation time, 148 (1997) 143

Assimilation of gelatin-acacia microencapsulated lipid by Pacific oyster (*Crassostrea gigas*) spat, 153 (1997) 291

Changes in shrimp feed quality and effects on growth and survival of *Penaeus monodon* juveniles, 151 (1997) 121

Effects of broodstock dietary lipid on fatty acid compositions of eggs from sea bass (*Dicentrarchus labrax*), 149 (1997) 107

Effect of dietary phospholipid on requirements for and incorporation of $n-3$ highly unsaturated fatty acids in postlarval *Penaeus japonicus* Bate, 158 (1997) 305

Growth and fatty acid composition of juvenile leader prawns, *Penaeus monodon*, fed different lipids, 151 (1997) 131

Growth of juvenile Asian seabass, *Lates calcarifer*, fed varying carbohydrate and lipid levels, 149 (1997) 137

Growth response and fatty acid composition of juvenile *Penaeus vannamei* fed different sources of dietary lipid, 151 (1997) 143

Nutritional properties of microalgae for mariculture, 151 (1997) 315

The lipid composition of sealoch sediments underlying salmon cages, 158 (1997) 69

The potential of certain indigenous copepod species as live food for commercial fish larval rearing, 151 (1997) 351

The significance of lipids at early stages of marine fish: a review, 155 (1997) 103

The use of silages prepared from fish neural tissues as enrichers for rotifers (*Brachionus plicatilis*) and *Artemia* in the nutrition of larval marine fish, 148 (1997) 213

The effects of experimental starter diets with different levels of soybean or menhaden oil on red drum (*Sciaenops ocellatus*), 149 (1997) 323

Lipid digestion

Lipid digestion in turbot (*Scophthalmus maximus*): in-vivo and in-vitro studies of the lipolytic activity in various segments of the digestive tract, 151 (1997) 155

Lipid emulsions

Influence of the EPA/DHA ratio in rotifers on gilthead seabream (*Sparus aurata*) larval development, 150 (1997) 77

Lipogenesis

Effect of feeding strategy and carbohydrate source on carbohydrate utilization by white sturgeon (*Acipenser transmontanus*) and hybrid tilapia (*Oreochromis niloticus* × *O. aureus*), 148 (1997) 201

Lipopolysaccharide

Characterization of core-oligosaccharide- and *O*-polysaccharide-specific monoclonal antibodies against *Aeromonas salmonicida* LPS binding to typical and atypical *Aeromonas salmonicida* isolates, 157 (1997) 157

Live food

Optimization of dietary vitamin C in fish and crustacean larvae: a review, 155 (1997) 165

The effect of supplemental ascorbic acid in enriched live food for *Clarias gariepinus* larvae at startfeeding, 151 (1997) 245

Liver

Changes in the fatty acid profiles of hybrid red tilapia, *Oreochromis mossambicus* × *O. niloticus*, subjected to short-term starvation, and a

- comparison with changes in seawater raised fish, 153 (1997) 273
- Effect of supplemental carnitine on body weight loss, proximate and lipid compositions and carnitine content of red sea bream (*Pagrus major*) during starvation, 158 (1997) 129
- The effects of experimental starter diets with different levels of soybean or menhaden oil on red drum (*Sciaenops ocellatus*), 149 (1997) 323
- Live vaccination**
Heterologous isolates challenge of channel catfish, *Ictalurus punctatus*, immune to *Edwardsiella ictaluri*, 157 (1997) 147
- Live vaccine**
Mini-Tn5 induced growth- and protease-deficient mutants of *Aeromonas hydrophila* as live vaccines for blue gourami, *Trichogaster trichopterus* (Pallas), 158 (1997) 11
- Low-cost**
Low-cost feed for *Penaeus monodon* reared in tanks and under semi-intensive and intensive conditions in brackishwater ponds, 154 (1997) 69
- LPS-CKC vaccine**
The efficacy of lipopolysaccharide mixed chloroform-killed cell (LPS-CKC) bacterin of *Pasteurella piscicida* on Yellowtail, *Seriola quinqueradiata*, 154 (1997) 95
- Lysine**
Quantitative lysine requirement of yellowtail (*Seriola quinqueradiata*), 158 (1997) 331
- Macquarie perch**
Effects of diets and feeding rate on the survival and growth of Macquarie perch (*Macquaria australasica*) larvae, a threatened Australian native fish, 157 (1997) 35
- Macrobrachium malcolmsonii**
Growth and production of Indian river prawn *Macrobrachium malcolmsonii* (H. Milne Edwards) under pond conditions, 154 (1997) 79
- Macrobrachium rosenbergii**
Enhancement of growth in juvenile freshwater prawns, *Macrobrachium rosenbergii*, through the use of a chemoattractant, 156 (1997) 221
- Relative prawn production and benthic macroinvertebrate densities in unfed, organically fertilized, and fed pond systems, 149 (1997) 227
- Macroelements**
Effect of stocking densities on trace metal concentration in three tissues of the brown shrimp *Penaeus californiensis*, 156 (1997) 21
- Maesa ramentacea**
Toxicity of the Thai piscicidal plant, *Maesa ramentacea*, to freshwater fishes in ponds, 158 (1997) 229
- Malformations**
Normal and abnormal osteological development of caudal fin in *Sparus aurata* L. fry, 149 (1997) 215
- Management**
Mass cultivation of the agar-producing alga *Gracilaria chilensis* (Rhodophyta) from spores, 148 (1997) 77
- Manganese**
Trace minerals in fish nutrition, 151 (1997) 185
- Manufactured diets**
Co-feeding marine fish larvae with inert and live diets, 155 (1997) 183
- Manuring rate**
Effect of manuring rate on in situ production of zooplankton *Daphnia carinata*, 156 (1997) 85
- Mariculture**
A biomechanical filter for treating fish-pond effluents, 152 (1997) 103
- Effects of trophic and environmental conditions on the growth of *Crassostrea gigas* in culture, 153 (1997) 81
- Mass cultivation of the agar-producing alga *Gracilaria chilensis* (Rhodophyta) from spores, 148 (1997) 77
- Marine**
Environmental risk from dissolved ivermectin to marine organisms, 158 (1997) 263
- Marine cages**
The lipid composition of sealoch sediments underlying salmon cages, 158 (1997) 69

Marine environment

Changes in oxytetracycline resistance of intestinal microflora following oral administration of this agent to Atlantic Salmon (*Salmo salar* L.) smolts in a marine environment, 157 (1997) 187

Marine fish culture

Domestication of the white grouper, *Epinephelus aeneus*. 1. Growth and reproduction, 156 (1997) 305

Marine fish larvae

Production and use of copepods in marine fish larviculture, 155 (1997) 231

Requirements, presentation and sources of polyunsaturated fatty acids in marine fish larval feeds, 155 (1997) 117

The use of behavioural observations in the larviculture of cold-water marine fish, 155 (1997) 297

Marine natural products

Influence of explant procedures and environmental factors on culture success of three sponges, 156 (1997) 251

Marine sediments

Antibacterial resistant bacteria in surficial sediments near salmon net-cage farms in Puget Sound, Washington, 149 (1997) 263

Microbial response to antibacterial treatment in marine microcosms, 152 (1997) 139

Market price

Larviculture of marine fish for sea ranching purposes: is it profitable?, 155 (1997) 341

Maturation

A review of the effect of genetics and environment on the maturation and larval quality of the giant tiger prawn *Penaeus monodon*, 155 (1997) 69

Domestication of the white grouper, *Epinephelus aeneus*. 1. Growth and reproduction, 156 (1997) 305

Medicated feed

Residues of oxytetracycline in cultured juvenile blue shrimp, *Penaeus stylirostris* (Crustacea:

Decapod), fed medicated feed for 14 days, 149 (1997) 193

Mediterranean Sea

Effects of trophic and environmental conditions on the growth of *Crassostrea gigas* in culture, 153 (1997) 81

Melanin plug

Larval behaviour and effect of the timing of initial feeding on growth and survival of Siberian sturgeon (*Acipenser baeri*) larvae under small scale hatchery production, 156 (1997) 63

Membrane

Morphological abnormalities in hatchery-bred milkfish (*Chanos chanos* Forsskal) fry and juveniles, 152 (1997) 155

Menadione sodium bisulphite

Effects of different levels of vitamin K in diets for cod (*Gadus morhua*), 151 (1997) 269

Menhaden oil

The effects of experimental starter diets with different levels of soybean or menhaden oil on red drum (*Sciaenops ocellatus*), 149 (1997) 323

Metamorphosis

Hydrogen peroxide induced metamorphosis of queen conch, *Strombus gigas*: Tests at the commercial scale, 148 (1997) 247

Sex differentiation, changes in length, weight and eye size before and after metamorphosis of European eel (*Anguilla anguilla* L.) maintained in captivity, 153 (1997) 151

Methionine

Nutritional value of soy protein concentrate for larvae of common carp (*Cyprinus carpio*) based on growth performance and digestive enzyme activities, 153 (1997) 63

Quantitative methionine requirement of yellow-tail (*Seriola quinqueradiata*), 150 (1997) 113

Mexico

Suspension culture of catarina scallop *Argopecten ventricosus* (= *circularis*) (Sowerby II, 1842), in Bahia Magdalena, Mexico, at different densities, 158 (1997) 235

Microalgae

A review of the nutritional effects of algae in marine fish larvae, 155 (1997) 207

Nutritional properties of microalgae for mariculture, 151 (1997) 315

Microbial processes

The role of microorganisms in aquaculture ponds, 151 (1997) 333

Microbiology

The use of immunostimulation in marine larviculture: possibilities and challenges, 155 (1997) 401

Microcapsule

Assimilation of gelatin-acacia microencapsulated lipid by Pacific oyster (*Crassostrea gigas*) spat, 153 (1997) 291

Growth and fatty acid composition of Pacific oyster (*Crassostrea gigas*) spat fed a spray-dried freshwater microalga (*Spongiococcum eccentricum*) and microencapsulated lipids, 154 (1997) 293

Microcosms

Microbial response to antibacterial treatment in marine microcosms, 152 (1997) 139

Microdiet

Effects of live food and dietary digestive enzymes on the efficiency of microdiets for seabass (*Dicentrarchus labrax*) larvae, 148 (1997) 313

The mode of action of *Artemia* in enhancing utilization of microdiet by gilthead seabream *Sparus aurata* larvae, 155 (1997) 193

Microencapsulated diet

Detecting growth in gilthead seabream, *Sparus aurata* L., larvae fed microcapsules, 153 (1997) 93

Microsatellites

Application of the microsatellite technique for analyzing genetic diversity in shrimp breeding programs, 152 (1997) 35

Microscreen filtration

Ozonation of a recirculating rainbow trout culture system. II. Effects on microscreen filtration and water quality, 158 (1997) 57

Milkfish

Bioeconomic evaluation of different fry production systems for milkfish (*Chanos chanos*), 155 (1997) 367

Morphological abnormalities in hatchery-bred milkfish (*Chanos chanos* Forsskal) fry and juveniles, 152 (1997) 155

Minerals

Nutritional values of chironomid larvae grown in palm oil mill effluent and algal culture, 158 (1997) 95

Trace minerals in fish nutrition, 151 (1997) 185

Mini-Tn5

Mini-Tn5 induced growth- and protease-deficient mutants of *Aeromonas hydrophila* as live vaccines for blue gourami, *Trichogaster trichopterus* (Pallas), 158 (1997) 11

Mitochondrial DNA

Genetic variation within and among Danish brown trout (*Salmo trutta* L.) hatchery strains, assessed by PCR-RFLP analysis of mitochondrial DNA segments, 153 (1997) 15

Model

Impacts of ectoparasitic gastropods on growth, survival, and physiology of juvenile giant clams (*Tridacna gigas*), including a simulation model of mortality and reduced growth rate, 150 (1997) 25

Modelling

Regulating the local environmental impact of intensive marine fish farming. I. The concept of the MOM system (Modelling-Ongrowing fish farms-Monitoring), 158 (1997) 85

Modelling trophic pathways

The role of microorganisms in aquaculture ponds, 151 (1997) 333

Modiolus metcalfei

Growth, mortality and recruitment pattern of the brown mussel, *Modiolus metcalfei* (Bivalvia: Mytilacea), in Panguil Bay, Southern Philippines, 154 (1997) 233

Moisture

Marron (*Cherax tenuimanus*) and noble crayfish (*Astacus astacus*) hepatopancreas energy and its relationship to moisture content, 149 (1997) 157

Mollusca

Nutritional potentialities of *Chlamydomonas coccoides* and *Thalassiosira fluviatilis*, as measured by their ingestion and digestion rates by the Queen Conch larvae (*Strombus gigas*), 156 (1997) 9

Molt

Reproduction and molt in previously spawned and first-time spawning red-claw crayfish *Cherax quadricarinatus* females following eye-stalk ablation during the winter reproductive-arrest period, 156 (1997) 101

Monitoring

Regulating the local environmental impact of intensive marine fish farming. I. The concept of the MOM system (Modelling-Ongrowing fish farms-Monitoring), 158 (1997) 85

Monoclonal antibodies

Characterization of core-oligosaccharide- and O-polysaccharide-specific monoclonal antibodies against *Aeromonas salmonicida* LPS binding to typical and atypical *Aeromonas salmonicida* isolates, 157 (1997) 157

Development of an ELISA to detect *Pasteurella piscicida* in culture and in 'spiked' fish tissue, 156 (1997) 359

Monosex

Sex reversal in black crappie *Pomoxis nigromaculatus*: effect of oral administration of 17 α -methyltestosterone on two age classes, 158 (1997) 155

Morone

Egg, larval, and fingerling traits of crosses among striped bass (*Morone saxatilis*), white bass (*M. chrysops*), and their F1 hybrids, 154 (1997) 201

Hormonal changes in male white bass (*Morone chrysops*) and evaluation of milt quality after treatment with a sustained-release GnRHa delivery system, 153 (1997) 301

Morphology

Effect of starvation on some morphological and biochemical parameters in white sturgeon, *Acipenser transmontanus*, 151 (1997) 357

Mortality

Growth, mortality and recruitment pattern of the brown mussel, *Modiolus metcalfei* (Bivalvia: Mytilacea), in Panguil Bay, Southern Philippines, 154 (1997) 233

Histopathological and bacteriological study of white spot syndrome of *Penaeus monodon* along the west coast of India, 153 (1997) 9

Mudworm

Spionid polychaete infestations of intertidal pacific oysters *Crassostrea gigas* (Thunberg), Mahurangi Harbour, northern New Zealand, 153 (1997) 191

Multilocus DNA fingerprints

Assessment of genetic variability among strains of rainbow and cutthroat trout using multilocus DNA fingerprints, 149 (1997) 47

Murrel

Interactions of dietary levels of protein and energy on fingerling snakehead, *Channa striata*, 156 (1997) 241

Muscle

Changes in the fatty acid profiles of hybrid red tilapia, *Oreochromis mossambicus* \times *O. niloticus*, subjected to short-term starvation, and a comparison with changes in seawater raised fish, 153 (1997) 273

Handling stress and water quality during live transportation and slaughter of Atlantic salmon (*Salmo salar*), 149 (1997) 243

Influence of dietary protein content on the distribution of amino acids in oocytes, serum and muscle of Nile tilapia, *Oreochromis niloticus* (L.), 152 (1997) 205

Mussels

Intertidal cultivation of *Gracilaria chilensis* (Rhodophyta) in southern Chile: long term invertebrate abundance patterns, 156 (1997) 269

- Transient presence of oxytetracycline in blue mussels (*Mytilus edulis*) following its therapeutic use at a marine Atlantic salmon farm, 149 (1997) 175
- Mytilus californianus***
Karyotypes and Ag-NORs of the mussels *Mytilus californianus* and *M. trossulus* from the Pacific Canadian coast, 153 (1997) 239
- Mytilus edulis***
Preingestive selection of different microalgal mixtures in *Crassostrea gigas* and *Mytilus edulis*, analysed by flow cytometry, 150 (1997) 123
- Mytilus trossulus***
Karyotypes and Ag-NORs of the mussels *Mytilus californianus* and *M. trossulus* from the Pacific Canadian coast, 153 (1997) 239
- 20:4(n - 6)**
Requirements, presentation and sources of polyunsaturated fatty acids in marine fish larval feeds, 155 (1997) 117
- 20:5(n - 3)**
Requirements, presentation and sources of polyunsaturated fatty acids in marine fish larval feeds, 155 (1997) 117
- 22:6(n - 3)**
Requirements, presentation and sources of polyunsaturated fatty acids in marine fish larval feeds, 155 (1997) 117
- N⁴-acetyl metabolite**
Pharmacokinetics and metabolism of sulphamonomethoxine in rainbow trout (*Oncorhynchus mykiss*) and yellowtail (*Seriola quinqueradiata*) following bolus intravascular administration, 153 (1997) 1
- NAD**
Niacin requirement and inability of tryptophan to act as a precursor of NAD⁺ in channel catfish, *Ictalurus punctatus*, 152 (1997) 273
- Natural pond productivity**
The role of microorganisms in aquaculture ponds, 151 (1997) 333
- Natural productivity**
Feed preparation and feed management strategies within semi-intensive fish farming systems in the tropics, 151 (1997) 379
- Natural tetraploidy**
Evidence of female heterogamety, B-chromosome and natural tetraploidy in the Asian catfish, *Clarias batrachus*, used in aquaculture, 149 (1997) 31
- Natural zooplankton**
Effects of different illumination levels on zooplankton abundance, feeding periodicity, growth and survival of the Asian sea bass, *Lates calcarifer* (Bloch), fry in illuminated floating nursery cages, 157 (1997) 227
- Vitamin B₆ in Atlantic halibut, *Hippoglossus hippoglossus*—endogenous utilization and retention in larvae fed natural zooplankton, 157 (1997) 337
- Net present value**
Larviculture of marine fish for sea ranching purposes: is it profitable?, 155 (1997) 341
- New feeds**
Effects of initial weight and genetic strain on feed training largemouth bass *Micropterus salmoides* using ground fish flesh and freeze dried krill as starter diets, 148 (1997) 179
- Niacin**
Niacin requirement and inability of tryptophan to act as a precursor of NAD⁺ in channel catfish, *Ictalurus punctatus*, 152 (1997) 273
- Nile tilapia**
A preliminary evaluation of cacao husks in practical diets for juvenile Nile tilapia (*Oreochromis niloticus*), 156 (1997) 211
- Noble crayfish**
Signal crayfish, *Pacifastacus leniusculus*, as a vector for *Psorospermium haeckeli* to noble crayfish, *Astacus astacus*, 148 (1996) 1
- Non-specific defense**
Non-specific immune responses in the red porgy *Pagrus pagrus* after crowding stress, 156 (1997) 279

NOR

Karyotypes and Ag-NORs of the mussels *Mytilus californianus* and *M. trossulus* from the Pacific Canadian coast, 153 (1997) 239

Nucleotides

Identification of feed enhancers for juvenile largemouth bass *Micropterus salmoides*, 148 (1997) 191

Numerical model

A population dynamics model for the Japanese oyster, *Crassostrea gigas*, 149 (1997) 285

Nutrient budget

Benthic metabolism and the effects of bioturbation in a fertilised polyculture fish pond in northeast Thailand, 150 (1997) 45

Nutrient budgets

Feed preparation and feed management strategies within semi-intensive fish farming systems in the tropics, 151 (1997) 379

Nutrient digestibility

Nutrient digestibility coefficients of some plant and animal proteins for rohu (*Labeo rohita*), 151 (1997) 37

Nutrient enrichment

Growth of juvenile *Actinopyga mauritiana* (Holothuroidea) in captivity, 152 (1997) 119

Nutrient reduction

Integrated marine cultivation of *Gracilaria chilensis* (Gracilariales, Rhodophyta) and salmon cages for reduced environmental impact and increased economic output, 156 (1997) 45

Nutrient requirements

Nutrient requirements of marine food fish cultured in Southeast Asia, 151 (1997) 283

Nutrition

A review of the nutritional effects of algae in marine fish larvae, 155 (1997) 207

Assimilation of gelatin-acacia microencapsulated lipid by Pacific oyster (*Crassostrea gigas*) spat, 153 (1997) 291

Association of pulse chase design, compartmental analysis and analog modeling to assess ab-

sorption and assimilation efficiencies in *Penaeus stylirostris* fed an artificial diet, 149 (1997) 71

Effect of dietary phospholipid on requirements for and incorporation of *n* - 3 highly unsaturated fatty acids in postlarval *Penaeus japonicus* Bate, 158 (1997) 305

Effect of dietary protein and energy level on growth and body composition of South African abalone, *Haliotis midae*, 156 (1997) 195

Effects of enzyme addition to canola meal in prawn diets, 151 (1997) 29

Evaluation of live microalgal diets for the seed culture of *Ruditapes decussatus* using physiological and biochemical parameters, 148 (1996) 11

Growth of European sea bass fingerlings (*Dicentrarchus labrax*) fed extruded diets containing varying levels of protein, lipid and carbohydrate, 156 (1997) 183

Growth response of juvenile *Barbodes altus* fed isocaloric diets with variable protein levels, 158 (1997) 321

Maturation performance of *Penaeus vannamei* co-fed *Artemia* biomass preparations, 155 (1997) 87

Nutritional potentialities of *Chlamydomonas coccooides* and *Thalassiosira fluviatilis*, as measured by their ingestion and digestion rates by the Queen Conch larvae (*Strombus gigas*), 156 (1997) 9

Protein and carbon utilization of rotifers (*Brachionus plicatilis*) in first feeding of turbot larvae (*Scophthalmus maximus* L.), 153 (1997) 103

The effect of dietary protein and lipid from squid and fish meals on egg quality of broodstock for gilthead seabream (*Sparus aurata*), 148 (1997) 233

The effects of experimental starter diets with different levels of soybean or menhaden oil on red drum (*Sciaenops ocellatus*), 149 (1997) 323

Nutritional value

Preliminary assessment of the seaweed *Porphyra purpurea* in artificial diets for thick-lipped grey mullet (*Chelon labrosus*), 152 (1997) 249

Nutritive value

Effects of variation in essential fatty acids in fish feeds on nutritive value of freshwater fish for humans, 151 (1997) 97

Off-season

LHRHa and pimozone-induced spawning of Asian catfish *Clarias macrocephalus* (Günther) at different times during an annual reproductive cycle, 148 (1997) 323

Oncorhynchus clarki

Assessment of genetic variability among strains of rainbow and cutthroat trout using multilocus DNA fingerprints, 149 (1997) 47

Oncorhynchus kisutch

Impact of a controlled release formulation of recombinant bovine growth hormone upon growth and seawater adaptation in coho (*Oncorhynchus kisutch*) and chinook (*Oncorhynchus tshawytscha*) salmon, 156 (1997) 113

Oncorhynchus mykiss

Assessment of genetic variability among strains of rainbow and cutthroat trout using multilocus DNA fingerprints, 149 (1997) 47

Efficiency of utilization of some potato starch modifications by rainbow trout (*Oncorhynchus mykiss*), 152 (1997) 235

Genetic and environmental variation of female reproductive traits in rainbow trout (*Oncorhynchus mykiss*), 154 (1997) 115

Pharmacokinetics and metabolism of sulphamonomethoxine in rainbow trout (*Oncorhynchus mykiss*) and yellowtail (*Seriola quinqueradiata*) following bolus intravascular administration, 153 (1997) 1

Pharmacokinetics of benzocaine in rainbow trout (*Oncorhynchus mykiss*) after intraarterial dosing, 148 (1996) 39

Plasma amino acids in rainbow trout (*Oncorhynchus mykiss*) fed intact protein or a crystalline amino acid diet, 151 (1997) 15

Prevention of stress in rainbow trout (*Oncorhynchus mykiss*) fed diets containing different doses of glucan, 154 (1997) 1

Re-evaluation of protein and amino acid requirements of rainbow trout (*Oncorhynchus mykiss*), 151 (1997) 3

The effect of diet on dorsal fin erosion in steelhead trout (*Oncorhynchus mykiss*), 156 (1997) 229

The effects of dietary fat content on performance and body composition of farmed rainbow trout (*Oncorhynchus mykiss*), 151 (1997) 173

Oncorhynchus tshawytscha

Impact of a controlled release formulation of recombinant bovine growth hormone upon growth and seawater adaptation in coho (*Oncorhynchus kisutch*) and chinook (*Oncorhynchus tshawytscha*) salmon, 156 (1997) 113

Oocyte

A comparative study of the ovarian development in wild and pond-reared shrimp, *Penaeus kerathurus* (Forskål, 1775), 148 (1996) 63

Influence of dietary protein content on the distribution of amino acids in oocytes, serum and muscle of Nile tilapia, *Oreochromis niloticus* (L.), 152 (1997) 205

Oocyte growth

Domestication of the white grouper, *Epinephelus aeneus*. 1. Growth and reproduction, 156 (1997) 305

Oomycetes

Barley straw inhibits growth of some aquatic saprolegniaceous fungi, 156 (1997) 157

Opercular complex

The opercular complex deformity in intensive gilthead sea bream (*Sparus aurata* L.) larviculture. Moment of apparition and description, 156 (1997) 165

Operculum

Morphological abnormalities in hatchery-bred milkfish (*Chanos chanos* Forsskal) fry and juveniles, 152 (1997) 155

Oreochromis

Cowpea (*Vigna unguiculata*) protein concentrate as replacement for fish meal in diets for tilapia (*Oreochromis niloticus*) fry, 158 (1997) 107

Oreochromis niloticus

Effect of body size on growth and energy budget of Nile tilapia, *Oreochromis niloticus*, 157 (1997) 25

Energy budget of Nile tilapia (*Oreochromis niloticus*) in relation to ration size, 154 (1997) 57

Oreochromis spp.

Effect of feeding strategy and carbohydrate source on carbohydrate utilization by white sturgeon (*Acipenser transmontanus*) and hybrid tilapia (*Oreochromis niloticus* × *O. aureus*), 148 (1997) 201

Organic fertilization

Relative prawn production and benthic macro-invertebrate densities in unfed, organically fertilized, and fed pond systems, 149 (1997) 227

Organic matter

An empirical model for predicting degradation of organic solids in fish culture systems based on short-term observations, 154 (1997) 173

Osteological abnormalities

Effect of water currents on the development of skeletal deformities in sea bass (*Dicentrarchus labrax* L.) with functional swimbladder during postlarval and nursery phase, 156 (1997) 145

The opercular complex deformity in intensive gilthead sea bream (*Sparus aurata* L.) larviculture. Moment of apparition and description, 156 (1997) 165

Osteology

Normal and abnormal osteological development of caudal fin in *Sparus aurata* L. fry, 149 (1997) 215

Ostrea edulis

Effects of broodstock diets on fatty acid composition, survival and growth rates in larvae of the European flat oyster, *Ostrea edulis*, 154 (1997) 139

Otolith-tagging

Growth performance in clonal crucian carp, *Carassius langsdorfii*. Effects of genetic difference and feeding history, 155 (1997) 271

Ovarian development

A comparative study of the ovarian development in wild and pond-reared shrimp, *Penaeus kerathurus* (Forskål, 1775), 148 (1996) 63

Ovarian histology

A comparative study of the ovarian development in wild and pond-reared shrimp, *Penaeus kerathurus* (Forskål, 1775), 148 (1996) 63

Ovotestis

Sex reversal in black crappie *Pomoxis nigromaculatus*: effect of oral administration of 17 α -methyltestosterone on two age classes, 158 (1997) 155

Ovulation

Domestication of the white grouper, *Epinephelus aeneus*. 1. Growth and reproduction, 156 (1997) 305

Oxidative rancidity

Changes in shrimp feed quality and effects on growth and survival of *Penaeus monodon* juveniles, 151 (1997) 121

Oxidised fat

Spontaneous steatitis of epicardial fat in farmed white sturgeon (*Acipenser transmontanus*), 158 (1997) 167

Oxygen consumption

Effects of growth hormone treatment on oxygen consumption and sea water adaptability in Atlantic salmon parr and pre-smolts, 148 (1996) 49

Oxygen uptake

Oxygen uptake and ammonia-N excretion of juvenile *Penaeus japonicus* during depuration following one-day exposure to different concentrations of saponin at different salinity levels, 156 (1997) 77

Oxytetracycline

Antibacterial resistant bacteria in surficial sediments near salmon net-cage farms in Puget Sound, Washington, 149 (1997) 263

Changes in oxytetracycline resistance of intestinal microflora following oral administration of this agent to Atlantic Salmon (*Salmo salar* L.) smolts in a marine environment, 157 (1997) 187

Residues of oxytetracycline in cultured juvenile blue shrimp, *Penaeus stylirostris* (Crustacea: Decapod), fed medicated feed for 14 days, 149 (1997) 193

Transient presence of oxytetracycline in blue mussels (*Mytilus edulis*) following its therapeutic use at a marine Atlantic salmon farm, 149 (1997) 175

Use of prophylactic treatments for larval rearing of giant crabs *Pseudocarcinus gigas* (Lamarck), 158 (1997) 203

Oyster

Assimilation of gelatin-acacia microencapsulated lipid by Pacific oyster (*Crassostrea gigas*) spat, 153 (1997) 291

Cryopreservation of late embryos and early larvae in the oyster and hard clam, 155 (1997) 31

Genetic improvement of oyster production—a critique, 153 (1997) 165

Growth and fatty acid composition of Pacific oyster (*Crassostrea gigas*) spat fed a spray-dried freshwater microalga (*Spongiococcum eccentricum*) and microencapsulated lipids, 154 (1997) 293

The first incidence of clionid sponges (Porifera) from the Sydney rock oyster *Saccostrea commercialis* (Iredale and Roughley, 1933), 157 (1997) 173

Ozone

Ozonation of a recirculating rainbow trout culture system. I. Effects on bacterial gill disease and heterotrophic bacteria, 158 (1997) 43

Ozonation of a recirculating rainbow trout culture system. II. Effects on microscreen filtration and water quality, 158 (1997) 57

Pacifastacus leniusculus

Signal crayfish, *Pacifastacus leniusculus*, as a vector for *Psorospermium haeckeli* to noble crayfish, *Astacus astacus*, 148 (1996) 1

Pacific oysters

Spionid polychaete infestations of intertidal Pacific oysters *Crassostrea gigas* (Thunberg), Mahurangi Harbour, northern New Zealand, 153 (1997) 191

Pagrus major

Usefulness of *Ascophyllum* meal as a feed additive for red sea bream, *Pagrus major*, 151 (1997) 275

Pagrus pagrus

Non-specific immune responses in the red porgy *Pagrus pagrus* after crowding stress, 156 (1997) 279

Palatability

Adaptation to soybean meal in diets for rainbow trout, *Oncorhynchus mykiss*, 153 (1997) 263

Palinurus

Application of ecosystem culture method for complete development of phyllosomas of spiny lobster, 155 (1997) 319

Pancreatin

Effects of live food and dietary digestive enzymes on the efficiency of microdiets for seabass (*Dicentrarchus labrax*) larvae, 148 (1997) 313

Panulirus

Application of ecosystem culture method for complete development of phyllosomas of spiny lobster, 155 (1997) 319

Paralichthys olivaceus

The establishment and partial characterization of a continuous fish cell line FG-9307 from the gill of flounder *Paralichthys olivaceus*, 156 (1997) 327

Particle selection

Preingestive selection of different microalgal mixtures in *Crassostrea gigas* and *Mytilus edulis*, analysed by flow cytometry, 150 (1997) 123

Particle size

Management of size variation in juvenile gilt-head sea bream (*Sparus aurata*). I: Particle size

and frequency of feeding dry and live food, 152 (1997) 181

Pasteurella piscicida

Development of an ELISA to detect *Pasteurella piscicida* in culture and in 'spiked' fish tissue, 156 (1997) 359

***Pasteurella piscicida* duration**

The efficacy of lipopolysaccharide mixed chloroform-killed cell (LPS-CKC) bacterin of *Pasteurella piscicida* on Yellowtail, *Seriola quinqueradiata*, 154 (1997) 95

Pathogen

Early weaning of seabass larvae, *Dicentrarchus labrax*: the effect on microbiota, with particular attention to iron supply and exoenzymes, 158 (1997) 117

PCR

Genetic variation within and among Danish brown trout (*Salmo trutta* L.) hatchery strains, assessed by PCR-RFLP analysis of mitochondrial DNA segments, 153 (1997) 15

Pearl oyster

Effects of stocking density on growth and survival of early juvenile silver-lip pearl oysters, *Pinctada maxima* (Jameson), held in suspended nursery culture, 153 (1997) 41

Fouling animals and their effect on the growth of silver-lip pearl oysters, *Pinctada maxima* (Jameson) in suspended culture, 153 (1997) 31

Penaeid

Effect of dietary phospholipid on requirements for and incorporation of $n-3$ highly unsaturated fatty acids in postlarval *Penaeus japonicus* Bate, 158 (1997) 305

Penaeid larviculture

Comparative study of continuous and static water renewal strategies in the larviculture of *Penaeus paulensis* (Pérez Farfante, 1967) associated with high stocking densities and different water renewal rates, 154 (1997) 247

Penaeid maturation

Maturation performance of *Penaeus vannamei* co-fed *Artemia* biomass preparations, 155 (1997) 87

Penaeid nutrition

Food ingestion and assimilation by the Southern brown shrimp *Penaeus subtilis* under semi-intensive culture in NE Brazil, 149 (1997) 121

Penaeids

Association of pulse chase design, compartmental analysis and analog modeling to assess absorption and assimilation efficiencies in *Penaeus stylirostris* fed an artificial diet, 149 (1997) 71

Penaeus

Seasonal and age variability in the reproductive performance of *Penaeus semisulcatus* broodstock: optimising broodstock selection, 155 (1997) 55

Penaeus californiensis

Effect of stocking densities on trace metal concentration in three tissues of the brown shrimp *Penaeus californiensis*, 156 (1997) 21

Penaeus japonicus

Effect of dietary phospholipid on requirements for and incorporation of $n-3$ highly unsaturated fatty acids in postlarval *Penaeus japonicus* Bate, 158 (1997) 305

Effects of dietary pyridoxine and protein levels on growth, vitamin B₆ content, and free amino acid profile of juvenile *Penaeus japonicus*, 157 (1997) 263

Oxygen uptake and ammonia-N excretion of juvenile *Penaeus japonicus* during depuration following one-day exposure to different concentrations of saponin at different salinity levels, 156 (1997) 77

Penaeus kerathurus

A comparative study of the ovarian development in wild and pond-reared shrimp, *Penaeus kerathurus* (Forskål, 1775), 148 (1996) 63

Penaeus monodon

A moist artificial diet for prawn broodstock: its effect on the variable reproductive performance of wild caught *Penaeus monodon*, 149 (1997) 145

- A review of the effect of genetics and environment on the maturation and larval quality of the giant tiger prawn *Penaeus monodon*, 155 (1997) 69
- Changes in shrimp feed quality and effects on growth and survival of *Penaeus monodon* juveniles, 151 (1997) 121
- Effects of enzyme addition to canola meal in prawn diets, 151 (1997) 29
- Estimates for the heritability of size in juvenile *Penaeus monodon* prawns from half-sib matings, 152 (1997) 49
- Growth and fatty acid composition of juvenile leader prawns, *Penaeus monodon*, fed different lipids, 151 (1997) 131
- Histopathological and bacteriological study of white spot syndrome of *Penaeus monodon* along the west coast of India, 153 (1997) 9
- Isolation of *Vibrio* spp. from *Penaeus monodon* (Fabricius) with red disease syndrome, 154 (1997) 107
- Quantitative requirements of linolenic and docosahexaenoic acid for juvenile *Penaeus monodon*, 157 (1997) 277
- Threonine requirement of juvenile marine shrimp *Penaeus monodon*, 151 (1997) 9
- Penaeus monodon***
Low-cost feed for *Penaeus monodon* reared in tanks and under semi-intensive and intensive conditions in brackishwater ponds, 154 (1997) 69
- Penaeus schmitti***
Critical dissolved oxygen level to *Penaeus setiferus* and *Penaeus schmitti* postlarvae (PL₁₀₋₁₈) exposed to salinity changes, 152 (1997) 259
- Penaeus setiferus***
Critical dissolved oxygen level to *Penaeus setiferus* and *Penaeus schmitti* postlarvae (PL₁₀₋₁₈) exposed to salinity changes, 152 (1997) 259
- Penaeus stylirostris***
Residues of oxytetracycline in cultured juvenile blue shrimp, *Penaeus stylirostris* (Crustacea: Decapod), fed medicated feed for 14 days, 149 (1997) 193
- Penaeus subtilis***
Food ingestion and assimilation by the Southern brown shrimp *Penaeus subtilis* under semi-intensive culture in NE Brazil, 149 (1997) 121
- Penaeus vannamei***
Application of the microsatellite technique for analyzing genetic diversity in shrimp breeding programs, 152 (1997) 35
- Growth response and fatty acid composition of juvenile *Penaeus vannamei* fed different sources of dietary lipid, 151 (1997) 143
- Maturation performance of *Penaeus vannamei* co-fed *Artemia* biomass preparations, 155 (1997) 87
- The effects of salinity and temperature on the growth and survival rates of juvenile white shrimp, *Penaeus vannamei*, Boone, 1931, 157 (1997) 107
- Perca fluviatilis***
Influence of feeding level on growth, intraspecific weight variability and sexual growth dimorphism of Eurasian perch *Perca fluviatilis* L. reared in a recirculation system, 157 (1997) 1
- Pharmacokinetics**
Pharmacokinetics and metabolism of sulphamonomethoxine in rainbow trout (*Oncorhynchus mykiss*) and yellowtail (*Seriola quinqueradiata*) following bolus intravascular administration, 153 (1997) 1
- Pharmacokinetics of benzocaine in rainbow trout (*Oncorhynchus mykiss*) after intraarterial dosing, 148 (1996) 39
- Phenotype**
Response of the yabby, *Cherax destructor* Clark, to natural and artificial diets: phenotypic variation in juvenile growth, 149 (1997) 39

Phosphatidylcholine

Effect of dietary phospholipid on requirements for and incorporation of $n-3$ highly unsaturated fatty acids in postlarval *Penaeus japonicus* Bate, 158 (1997) 305

Phospholipid

Effect of dietary phospholipid on requirements for and incorporation of $n-3$ highly unsaturated fatty acids in postlarval *Penaeus japonicus* Bate, 158 (1997) 305

Effects of docosahexaenoic acid and phospholipids on stress tolerance of fish, 155 (1997) 129

Review on the dietary effects of phospholipids in fish and crustacean larviculture, 155 (1997) 149

Phosphorus

Availability of phosphorus in fish bone meal and inorganic salts to Atlantic salmon (*Salmo salar*) as determined by retention, 157 (1997) 51

Phosphorus bioavailability

Available phosphorus requirements of food-size channel catfish (*Ictalurus punctatus*) fed practical diets in ponds, 154 (1997) 283

Phosphorus metabolism

Metabolic response to dietary phosphorus intake in rainbow trout (*Oncorhynchus mykiss*), 157 (1997) 11

Phosphorus requirement

Available phosphorus requirements of food-size channel catfish (*Ictalurus punctatus*) fed practical diets in ponds, 154 (1997) 283

pH-stat

pH-stat method to predict protein digestibility in white shrimp (*Penaeus vannamei*), 157 (1997) 251

Phyllosoma

Application of ecosystem culture method for complete development of phyllosomas of spiny lobster, 155 (1997) 319

Physiology

Impacts of ectoparasitic gastropods on growth, survival, and physiology of juvenile giant clams

(*Tridacna gigas*), including a simulation model of mortality and reduced growth rate, 150 (1997) 25

Pigmentation

Bioavailability of all-*E*-astaxanthin and *Z*-isomers of astaxanthin in rainbow trout (*Oncorhynchus mykiss*), 157 (1997) 63

Iodoxanthin, a major carotenoid in the flesh of Arctic charr (*Salvelinus alpinus*) fed diets containing astaxanthin, 150 (1997) 135

Pinctada maxima

Effects of stocking density on growth and survival of early juvenile silver-lip pearl oysters, *Pinctada maxima* (Jameson), held in suspended nursery culture, 153 (1997) 41

Fouling animals and their effect on the growth of silver-lip pearl oysters, *Pinctada maxima* (Jameson) in suspended culture, 153 (1997) 31

Placopecten

Spat settlement of the giant scallop, *Placopecten magellanicus* (Gmelin, 1791), and other bivalve species on artificial filamentous collectors coated with chitinous material, 148 (1997) 277

Plant protein sources

Evaluation of some plant ingredients as dietary protein sources for common carp (*Cyprinus carpio* L.) fry, 151 (1997) 55

Formulation of cost-effective feeds from locally available ingredients for carp polyculture system for increased production, 151 (1997) 71

Plasma amino acids

Plasma amino acids in rainbow trout (*Oncorhynchus mykiss*) fed intact protein or a crystalline amino acid diet, 151 (1997) 15

Plasma ammonia

Chronic ammonia toxicity in juvenile turbot (*Scophthalmus maximus*), 154 (1997) 155

Plasma GH concentrations

Impact of a controlled release formulation of recombinant bovine growth hormone upon growth and seawater adaptation in coho (*Oncorhynchus kisutch*) and chinook (*Oncorhynchus tshawytscha*) salmon, 156 (1997) 113

Pollution

Effect of stocking densities on trace metal concentration in three tissues of the brown shrimp *Penaeus californiensis*, 156 (1997) 21

Polychaetes

Intertidal cultivation of *Gracilaria chilensis* (Rhodophyta) in southern Chile: long term invertebrate abundance patterns, 156 (1997) 269

Polydora

Spionid polychaete infestations of intertidal pacific oysters *Crassostrea gigas* (Thunberg), Mahurangi Harbour, northern New Zealand, 153 (1997) 191

Polymerase chain reaction

Genomic identification of catfish species by polymerase chain reaction and restriction enzyme analysis of the gene encoding the immunoglobulin M heavy chain constant region, 156 (1997) 129

Polysaccharide digestion

The role of bacteria in the digestion of seaweed by the abalone *Haliotis midae*, 155 (1997) 377

Polyunsaturated fatty acids

Effects of broodstock diets on fatty acid composition, survival and growth rates in larvae of the European flat oyster, *Ostrea edulis*, 154 (1997) 139

Requirements, presentation and sources of polyunsaturated fatty acids in marine fish larval feeds, 155 (1997) 117

Pond conditions

Growth and production of Indian river prawn *Macrobrachium malcolmsonii* (H. Milne Edwards) under pond conditions, 154 (1997) 79

Pond production

Pond production of pellet-fed advanced juvenile and food-size largemouth bass, 149 (1997) 253

Pond-reared shrimp

A comparative study of the ovarian development in wild and pond-reared shrimp, *Penaeus kerathurus* (Forskål, 1775), 148 (1996) 63

Population growth

Growth, mortality and recruitment pattern of the brown mussel, *Modiolus metcalfei* (Bi-

valvia: Mytilacea), in Panguil Bay, Southern Philippines, 154 (1997) 233

Post-larval abalone

Survival and growth rates of post-larval abalone *Haliotis discus hannai* fed conspecific trail mucus and/or benthic diatom *Cocconeis scutellum* var. *parva*, 152 (1997) 129

Post-smolt

Susceptibility to furunculosis, cold water vibriosis, and infectious pancreatic necrosis (IPN) in post-smolt Atlantic salmon (*Salmo salar* L.) as a function of smolt status by seawater transfer, 158 (1997) 179

Poultry-feather meal

Evaluation of poultry-feather meal as a dietary protein source for Indian major carp, *Labeo rohita* fry, 151 (1997) 47

Prawn

A moist artificial diet for prawn broodstock: its effect on the variable reproductive performance of wild caught *Penaeus monodon*, 149 (1997) 145

Prefattening

Growth of clam seed (*Ruditapes decussatus*) reared in the wastewater effluent from a fish farm in Galicia (N.W. Spain), 158 (1997) 247

Prevention

Prevention of stress in rainbow trout (*Oncorhynchus mykiss*) fed diets containing different doses of glucan, 154 (1997) 1

Priorities

Priorities during early growth of fish larvae, 155 (1997) 249

Probiotic bacteria

Potential probiotic strains in the culture of the Chilean scallop *Argopecten purpuratus* (Lamarck, 1819), 154 (1997) 17

Procambarus clarkii

A comparison of the known life forms of *Psorospermium* spp. in freshwater crayfish (Arthropoda, decapoda) with emphasis on *Astacus astacus* L. (Astacidae) and *Procambarus clarkii* (Girard) (Cambaridae), 149 (1997) 15

Production

Growth and production of Indian river prawn *Macrobrachium malcolmsonii* (H. Milne Edwards) under pond conditions, 154 (1997) 79

The effect of stocking density on yield, growth and mortality of African catfish (*Clarias gariepinus* Burchell 1822) cultured in cages, 152 (1997) 67

Propanil

Evaluation of effects of common aerially-applied soybean herbicides and propanil on the plankton communities of aquaculture ponds, 157 (1997) 117

Protein

Effect of dietary protein and energy level on growth and body composition of South African abalone, *Haliotis midae*, 156 (1997) 195

Effects of dietary pyridoxine and protein levels on growth, vitamin B₆ content, and free amino acid profile of juvenile *Penaeus japonicus*, 157 (1997) 263

Growth response of juvenile *Barbodes altus* fed isocaloric diets with variable protein levels, 158 (1997) 321

Nutritional properties of microalgae for mariculture, 151 (1997) 315

Replacement of protein by fat and carbohydrate in diets for atlantic salmon (*Salmo salar*) at the end of the freshwater stage, 152 (1997) 167

Proteinases

Protein-hydrolyzing enzymes in the digestive systems of the adult Mexican blue abalone, *Haliotis fulgens* (Gastropoda), 157 (1997) 325

Protein binding

Pharmacokinetics and metabolism of sulphamonomethoxine in rainbow trout (*Oncorhynchus mykiss*) and yellowtail (*Seriola quinqueradiata*) following bolus intravascular administration, 153 (1997) 1

Protein concentrates

Cowpea (*Vigna unguiculata*) protein concentrate as replacement for fish meal in diets for tilapia (*Oreochromis niloticus*) fry, 158 (1997) 107

Protein digestibility

Evaluation of some plant ingredients as dietary protein sources for common carp (*Cyprinus carpio* L.) fry, 151 (1997) 55

pH-stat method to predict protein digestibility in white shrimp (*Penaeus vannamei*), 157 (1997) 251

Protein requirement

Interactions of dietary levels of protein and energy on fingerling snakehead, *Channa striata*, 156 (1997) 241

Protein to energy ratio

Interactions of dietary levels of protein and energy on fingerling snakehead, *Channa striata*, 156 (1997) 241

Protein utilization

Protein and carbon utilization of rotifers (*Brachionus plicatilis*) in first feeding of turbot larvae (*Scophthalmus maximus* L.), 153 (1997) 103

Proteolytic activity

Protein-hydrolyzing enzymes in the digestive systems of the adult Mexican blue abalone, *Haliotis fulgens* (Gastropoda), 157 (1997) 325

P. setiferus

Evaluating hybridization potential between *Penaeus setiferus* and *Penaeus vannamei* through natural mating, artificial insemination and in vitro fertilization, 150 (1997) 1

Pseudocarcinus gigas

Use of prophylactic treatments for larval rearing of giant crabs *Pseudocarcinus gigas* (Lamarck), 158 (1997) 203

Pseudomonas anguilliseptica

Winter disease outbreak in sea-bream (*Sparus aurata*) associated with *Pseudomonas anguilliseptica* infection, 156 (1997) 317

Psorospermium haeckeli

Signal crayfish, *Pacifastacus leniusculus*, as a vector for *Psorospermium haeckeli* to noble crayfish, *Astacus astacus*, 148 (1996) 1

Psorospermium spp.

A comparison of the known life forms of *Psorospermium* spp. in freshwater crayfish (Arthropoda, decapoda) with emphasis on *Astacus astacus* L. (Astacidae) and *Procambarus clarkii* (Girard) (Cambaridae), 149 (1997) 15

n-3 PUFA

Effects of broodstock dietary lipid on fatty acid compositions of eggs from sea bass (*Dicentrarchus labrax*), 149 (1997) 107

Puget Sound

Antibacterial resistant bacteria in surficial sediments near salmon net-cage farms in Puget Sound, Washington, 149 (1997) 263

P. vannamei

Evaluating hybridization potential between *Penaeus setiferus* and *Penaeus vannamei* through natural mating, artificial insemination and in vitro fertilization, 150 (1997) 1

Pyramidellid

Impacts of ectoparasitic gastropods on growth, survival, and physiology of juvenile giant clams (*Tridacna gigas*), including a simulation model of mortality and reduced growth rate, 150 (1997) 25

Pyridoxine

Effects of dietary pyridoxine and protein levels on growth, vitamin B₆ content, and free amino acid profile of juvenile *Penaeus japonicus*, 157 (1997) 263

Quality

The impact of raw material freshness and processing temperature for fish meal on growth, feed efficiency and chemical composition of Atlantic halibut (*Hippoglossus hippoglossus*), 149 (1997) 87

Queen conch

Hydrogen peroxide induced metamorphosis of queen conch, *Strombus gigas*: Tests at the commercial scale, 148 (1997) 247

Rainbow trout

Depletion study of fenbendazole in rainbow trout (*Oncorhynchus mykiss*) after oral and bath treatment, 154 (1997) 191

Genetic and environmental variation of female reproductive traits in rainbow trout (*Oncorhynchus mykiss*), 154 (1997) 115

Metabolic response to dietary phosphorus intake in rainbow trout (*Oncorhynchus mykiss*), 157 (1997) 11

Plasma amino acids in rainbow trout (*Oncorhynchus mykiss*) fed intact protein or a crystalline amino acid diet, 151 (1997) 15

Re-evaluation of protein and amino acid requirements of rainbow trout (*Oncorhynchus mykiss*), 151 (1997) 3

The effects of dietary fat content on performance and body composition of farmed rainbow trout (*Oncorhynchus mykiss*), 151 (1997) 173

Rainbow trout fry syndrome (RTFS)

Minimum inhibitory concentrations of selected antimicrobial compounds against *Flavobacterium psychrophilum* the causal agent of rainbow trout fry syndrome (RTFS), 158 (1997) 193

Rainbow trout (*Oncorhynchus mykiss*)

Bioavailability of all-*E*-astaxanthin and *Z*-isomers of astaxanthin in rainbow trout (*Oncorhynchus mykiss*), 157 (1997) 63

Rainbow trout *Oncorhynchus mykiss*

Adaptation to soybean meal in diets for rainbow trout, *Oncorhynchus mykiss*, 153 (1997) 263

Random amplification of polymorphic DNA (RAPD)

RAPD evidence for the origin of crayfish plague outbreaks in Britain, 157 (1997) 181

RAPD

Inheritance of RAPD markers and detection of interspecific hybridization with brown trout and Atlantic salmon, 152 (1997) 55

Ration size

Energy budget of Nile tilapia (*Oreochromis niloticus*) in relation to ration size, 154 (1997) 57

Reactor

A biomechanical filter for treating fish-pond effluents, 152 (1997) 103

Recapture rate

Comparison of the marine survival of Atlantic salmon, *Salmo salar* L. smolts vaccinated and nonvaccinated against vibriosis, 156 (1997) 349

Recirculating system

Ozonation of a recirculating rainbow trout culture system. II. Effects on microscreen filtration and water quality, 158 (1997) 57

Recombinant bovine growth hormone

Impact of a controlled release formulation of recombinant bovine growth hormone upon growth and seawater adaptation in coho (*Oncorhynchus kisutch*) and chinook (*Oncorhynchus tshawytscha*) salmon, 156 (1997) 113

Recombinant vaccine

Protection of goldfish against *Ichthyophthirius multifiliis* by immunization with a recombinant vaccine, 158 (1997) 1

Recrudescence

Influence of dietary protein level on ovarian recrudescence in Nile tilapia, *Oreochromis niloticus* (L.), 149 (1997) 57

Recruitment pattern

Growth, mortality and recruitment pattern of the brown mussel, *Modiolus metcalfei* (Bivalvia: Mytilacea), in Panguil Bay, Southern Philippines, 154 (1997) 233

Red disease syndrome

Isolation of *Vibrio* spp. from *Penaeus monodon* (Fabricius) with red disease syndrome, 154 (1997) 107

Red drum

Growth and body composition of juvenile red drum (*Sciaenops ocellatus*) fed diets containing lecithin and supplemental choline, 151 (1997) 259

The effects of experimental starter diets with different levels of soybean or menhaden oil on red drum (*Sciaenops ocellatus*), 149 (1997) 323

Red porgy

Non-specific immune responses in the red porgy *Pagrus pagrus* after crowding stress, 156 (1997) 279

Red sea beam

Usefulness of *Ascophyllum* meal as a feed additive for red sea bream, *Pagrus major*, 151 (1997) 275

Red sea bream

Effect of supplemental carnitine on body weight loss, proximate and lipid compositions and carnitine content of red sea bream (*Pagrus major*) during starvation, 158 (1997) 129

Red tilapia

Changes in the fatty acid profiles of hybrid red tilapia, *Oreochromis mossambicus* × *O. niloticus*, subjected to short-term starvation, and a comparison with changes in seawater raised fish, 153 (1997) 273

Regimen

Diet and feeding regimens for larval doughboy scallops, *Mimachlamys asperima*, 158 (1997) 289

Regulation system

Regulating the local environmental impact of intensive marine fish farming. I. The concept of the MOM system (Modelling-Ongrowing fish farms-Monitoring), 158 (1997) 85

Reproduction

A moist artificial diet for prawn broodstock: its effect on the variable reproductive performance of wild caught *Penaeus monodon*, 149 (1997) 145

Genetic and environmental variation of female reproductive traits in rainbow trout (*Oncorhynchus mykiss*), 154 (1997) 115

LHRHa and pimozone-induced spawning of Asian catfish *Clarias macrocephalus* (Gunther) at different times during an annual reproductive cycle, 148 (1997) 323

Reproduction and molt in previously spawned and first-time spawning red-claw crayfish *Cherax quadricarinatus* females following eye-stalk ablation during the winter reproductive-arrest period, 156 (1997) 101

Seasonal and age variability in the reproductive performance of *Penaeus semisulcatus* broodstock: optimising broodstock selection, 155 (1997) 55

- The effect of dietary protein and lipid from squid and fish meals on egg quality of broodstock for gilthead seabream (*Sparus aurata*), 148 (1997) 233
- Reproductive efficiency**
A population dynamics model for the Japanese oyster, *Crassostrea gigas*, 149 (1997) 285
- Requirements**
Niacin requirement and inability of tryptophan to act as a precursor of NAD⁺ in channel catfish, *Ictalurus punctatus*, 152 (1997) 273
- Residue**
Residues of oxytetracycline in cultured juvenile blue shrimp, *Penaeus stylirostris* (Crustacea: Decapod), fed medicated feed for 14 days, 149 (1997) 193
- Residues**
Tissue distribution and depletion of flumequine after in-feed administration in sea bream (*Sparus aurata*), 157 (1997) 197
- Resistance**
Changes in oxytetracycline resistance of intestinal microflora following oral administration of this agent to Atlantic Salmon (*Salmo salar* L.) smolts in a marine environment, 157 (1997) 187
- Respiration rate**
A population dynamics model for the Japanese oyster, *Crassostrea gigas*, 149 (1997) 285
- Resting egg**
Mass production and preservation of the resting eggs of the euryhaline rotifer *Brachionus plicatilis* and *B. rotundiformis*, 155 (1997) 223
- Restriction enzyme analysis**
Genomic identification of catfish species by polymerase chain reaction and restriction enzyme analysis of the gene encoding the immunoglobulin M heavy chain constant region, 156 (1997) 129
- Return rate**
Larviculture of marine fish for sea ranching purposes: is it profitable?, 155 (1997) 341
- Review**
The digestive physiology of herbivorous, omnivorous and carnivorous crustacean larvae: a review, 155 (1997) 285
- RFLP**
Assessment of genetic variability among strains of rainbow and cutthroat trout using multilocus DNA fingerprints, 149 (1997) 47
- Riboflavin**
Nutritional properties of microalgae for mariculture, 151 (1997) 315
- Rice-fish**
Rice-fish culture: feeding, growth and yield of two size classes of *Puntius gonionotus* Bleeker and *Oreochromis* spp. in Bangladesh, 154 (1997) 261
- Risk**
Environmental risk from dissolved ivermectin to marine organisms, 158 (1997) 263
- Rohu**
Nutrient digestibility coefficients of some plant and animal proteins for rohu (*Labeo rohita*), 151 (1997) 37
- Romet³⁰**
Multiple-dose pharmacokinetic study of Romet³⁰ in Atlantic salmon (*Salmo salar*) and in vitro antibacterial activity against *Aeromonas salmonicida*, 152 (1997) 13
- Rotifera**
Mass production and preservation of the resting eggs of the euryhaline rotifer *Brachionus plicatilis* and *B. rotundiformis*, 155 (1997) 223
- Rotifer preservation**
Mass production and preservation of the resting eggs of the euryhaline rotifer *Brachionus plicatilis* and *B. rotundiformis*, 155 (1997) 223
- Rotifers**
A review of the nutritional effects of algae in marine fish larvae, 155 (1997) 207

Influence of the EPA/DHA ratio in rotifers on gilthead seabream (*Sparus aurata*) larval development, 150 (1997) 77

The significance of lipids at early stages of marine fish: a review, 155 (1997) 103

The use of silages prepared from fish neural tissues as enrichers for rotifers (*Brachionus plicatilis*) and *Artemia* in the nutrition of larval marine fish, 148 (1997) 213

Ruditapes decussatus

Evaluation of freeze-dried microalgal diets for the seed culture of *Ruditapes decussatus* using physiological and biochemical parameters, 154 (1997) 305

Evaluation of live microalgal diets for the seed culture of *Ruditapes decussatus* using physiological and biochemical parameters, 148 (1996) 11

Growth of clam seed (*Ruditapes decussatus*) reared in the wastewater effluent from a fish farm in Galicia (N.W. Spain), 158 (1997) 247

Salinity

Critical dissolved oxygen level to *Penaeus setiferus* and *Penaeus schmitti* postlarvae (PL₁₀₋₁₈) exposed to salinity changes, 152 (1997) 259

Effects of salinity on yolk sac larvae of Atlantic halibut (*Hippoglossus hippoglossus* L.), 156 (1997) 291

Influence of salinity on food consumption, growth and energy conversion efficiency of common carp (*Cyprinus carpio*) fingerlings, 148 (1997) 115

Oxygen uptake and ammonia-N excretion of juvenile *Penaeus japonicus* during depuration following one-day exposure to different concentrations of saponin at different salinity levels, 156 (1997) 77

The effects of salinity and temperature on the growth and survival rates of juvenile white shrimp, *Penaeus vannamei*, Boone, 1931, 157 (1997) 107

Salmon

Post-vaccination intra-abdominal adhesions as a marker to identify Atlantic salmon, *Salmo salar* L., escaped from commercial fish farms, 154 (1997) 27

The lipid composition of sealoch sediments underlying salmon cages, 158 (1997) 69

Salmon cage farming

Integrated marine cultivation of *Gracilaria chilensis* (Gracilariales, Rhodophyta) and salmon cages for reduced environmental impact and increased economic output, 156 (1997) 45

Salmonella

Salmonella spp. in free-ranging and farmed alligators (*Alligator mississippiensis*) from Texas and Louisiana, U.S.A., 156 (1997) 179

Salmon net-cages

Antibacterial resistant bacteria in surficial sediments near salmon net-cage farms in Puget Sound, Washington, 149 (1997) 263

Salmo salar

Anorexia in one-sea-winter Atlantic salmon (*Salmo salar*) during summer, associated with sexual maturation, 151 (1997) 405

Comparison of the marine survival of Atlantic salmon, *Salmo salar* L. smolts vaccinated and nonvaccinated against vibriosis, 156 (1997) 349

Effects of dietary astaxanthin supplementation on fertilization and egg survival in Atlantic salmon (*Salmo salar* L.), 153 (1997) 51

Evidence for adaptive matching of appetite in juvenile Atlantic salmon (*Salmo salar*) with regular seasonal rhythms of food availability, 151 (1997) 411

Genetic correlations between survival of Atlantic salmon in challenge and field tests, 158 (1997) 277

Handling stress and water quality during live transportation and slaughter of Atlantic salmon (*Salmo salar*), 149 (1997) 243

Multiple-dose pharmacokinetic study of Romet³⁰ in Atlantic salmon (*Salmo salar*) and in vitro antibacterial activity against *Aeromonas salmonicida*, 152 (1997) 13

Quality parameters of the flesh of Atlantic salmon (*Salmo salar*) as affected by dietary fat content and full-fat soybean meal as a partial substitute for fish meal in the diet, 157 (1997) 297

The efficacy of hydrogen peroxide for the treatment of farmed Atlantic salmon, *Salmo salar* L. infested with sea lice (Copepoda: Caligidae), 148 (1997) 265

Vaccination improves survival of Baltic salmon (*Salmo salar*) smolts in delayed release sea ranching (net-pen period), 156 (1997) 335

Yellow pigmented filamentous bacteria connected with farmed salmonid fish mortality, 149 (1997) 1

Salmo trutta

Genetic variation within and among Danish brown trout (*Salmo trutta* L.) hatchery strains, assessed by PCR-RFLP analysis of mitochondrial DNA segments, 153 (1997) 15

Yellow pigmented filamentous bacteria connected with farmed salmonid fish mortality, 149 (1997) 1

Salvelinus alpinus

Iodoxanthin, a major carotenoid in the flesh of Arctic charr (*Salvelinus alpinus*) fed diets containing astaxanthin, 150 (1997) 135

Sandwich-ELISA

Development of an ELISA to detect *Pasteurella piscicida* in culture and in 'spiked' fish tissue, 156 (1997) 359

Saponin

Oxygen uptake and ammonia-N excretion of juvenile *Penaeus japonicus* during depuration following one-day exposure to different concentrations of saponin at different salinity levels, 156 (1997) 77

Saprolegnia

Barley straw inhibits growth of some aquatic saprolegniaceous fungi, 156 (1997) 157

Scallop

Diet and feeding regimens for larval doughboy scallops, *Mimachlamys asperrima*, 158 (1997) 289

Suspension culture of catarina scallop *Argopecten ventricosus* (= *circularis*) (Sowerby II, 1842), in Bahía Magdalena, Mexico, at different densities, 158 (1997) 235

Scallop aquaculture Chile

Potential probiotic strains in the culture of the Chilean scallop *Argopecten purpuratus* (Lamarck, 1819), 154 (1997) 17

Scallops

Spat settlement of the giant scallop, *Placopecten magellanicus* (Gmelin, 1791), and other bivalve species on artificial filamentous collectors coated with chitinous material, 148 (1997) 277

Sciaenops ocellatus

Growth and body composition of juvenile red drum (*Sciaenops ocellatus*) fed diets containing lecithin and supplemental choline, 151 (1997) 259

The effects of experimental starter diets with different levels of soybean or menhaden oil on red drum (*Sciaenops ocellatus*), 149 (1997) 323

Scophthalmus maximus

Lipid digestion in turbot (*Scophthalmus maximus*): in-vivo and in-vitro studies of the lipolytic activity in various segments of the digestive tract, 151 (1997) 155

***Scophthalmus maximus* L.**

Protein and carbon utilization of rotifers (*Brachionus plicatilis*) in first feeding of turbot larvae (*Scophthalmus maximus* L.), 153 (1997) 103

Screened rotifers

Larval rearing of the grouper *Epinephelus suillus* under laboratory conditions, 150 (1997) 63

Sea-age at maturity

The genetic consequence of hatchery-rearing on life-history traits of the Atlantic salmon (*Salmo salar* L.): a comparative analysis of sea-ranched salmon with wild and reared parents, 153 (1997) 207

Sea bass

Effects of broodstock dietary lipid on fatty acid compositions of eggs from sea bass (*Dicentrarchus labrax*), 149 (1997) 107

Growth of European sea bass fingerlings (*Dicentrarchus labrax*) fed extruded diets containing varying levels of protein, lipid and carbohydrate, 156 (1997) 183

Optimal conditions for the induction of triploidy in the sea bass (*Dicentrarchus labrax* L.), 152 (1997) 287

Seabass

Different concentrations of ascorbyl-2-monophosphate-magnesium as dietary sources of vitamin C for seabass, *Lates calcarifer*, 151 (1997) 225

Effects of live food and dietary digestive enzymes on the efficiency of microdiets for seabass (*Dicentrarchus labrax*) larvae, 148 (1997) 313

Sea bream

Tissue distribution and depletion of flumequine after in-feed administration in sea bream (*Sparus aurata*), 157 (1997) 197

Sea-bream

Winter disease outbreak in sea-bream (*Sparus aurata*) associated with *Pseudomonas anguilliseptica* infection, 156 (1997) 317

Seabream

The effect of dietary protein and lipid from squid and fish meals on egg quality of broodstock for gilthead seabream (*Sparus aurata*), 148 (1997) 233

Sea cucumbers

Growth of juvenile *Actinopyga mauritiana* (Holothuroidea) in captivity, 152 (1997) 119

Sea lice

The effects of hydrogen peroxide on the gill tissues of Atlantic salmon, *Salmo salar* L., 153 (1997) 181

The efficacy of hydrogen peroxide for the treatment of farmed Atlantic salmon, *Salmo salar* L. infested with sea lice (Copepoda: Caligidae), 148 (1997) 265

Sea migration

The genetic consequence of hatchery-rearing on life-history traits of the Atlantic salmon (*Salmo salar* L.): a comparative analysis of sea-ranched salmon with wild and reared parents, 153 (1997) 207

Sea ranched stock

The genetic consequence of hatchery-rearing on life-history traits of the Atlantic salmon (*Salmo salar* L.): a comparative analysis of sea-ranched salmon with wild and reared parents, 153 (1997) 207

Sea ranching

Vaccination improves survival of Baltic salmon (*Salmo salar*) smolts in delayed release sea ranching (net-pen period), 156 (1997) 335

Sea-ranching

Larviculture of marine fish for sea ranching purposes: is it profitable?, 155 (1997) 341

Seasonal rhythms

Evidence for adaptive matching of appetite in juvenile Atlantic salmon (*Salmo salar*) with regular seasonal rhythms of food availability, 151 (1997) 411

Sea water adaptation

Effects of growth hormone treatment on oxygen consumption and sea water adaptability in Atlantic salmon parr and pre-smolts, 148 (1996) 49

Seaweed farming

Integrated marine cultivation of *Gracilaria chilensis* (Gracilariales, Rhodophyta) and salmon cages for reduced environmental impact and increased economic output, 156 (1997) 45

Seaweed meal

Preliminary assessment of the seaweed *Porphyra purpurea* in artificial diets for thick-lipped grey mullet (*Chelon labrosus*), 152 (1997) 249

Sediment metabolism

Benthic metabolism and the effects of bioturbation in a fertilised polyculture fish pond in northeast Thailand, 150 (1997) 45

Sediments

Intertidal cultivation of *Gracilaria chilensis* (Rhodophyta) in southern Chile: long term invertebrate abundance patterns, 156 (1997) 269

The lipid composition of sealoch sediments underlying salmon cages, 158 (1997) 69

Seed

Evaluation of freeze-dried microalgal diets for the seed culture of *Ruditapes decussatus* using physiological and biochemical parameters, 154 (1997) 305

Evaluation of live microalgal diets for the seed culture of *Ruditapes decussatus* using physiological and biochemical parameters, 148 (1996) 11

Growth of clam seed (*Ruditapes decussatus*) reared in the wastewater effluent from a fish farm in Galicia (N.W. Spain), 158 (1997) 247

Selection

Genetic improvement of oyster production—a critique, 153 (1997) 165

Seasonal and age variability in the reproductive performance of *Penaeus semisulcatus* broodstock: optimising broodstock selection, 155 (1997) 55

Selenium

Organic selenium sources, selenomethionine and selenoyeast, have higher bioavailability than an inorganic selenium source, sodium selenite, in diets for channel catfish (*Ictalurus punctatus*), 152 (1997) 223

Trace minerals in fish nutrition, 151 (1997) 185

Selenomethionine

Organic selenium sources, selenomethionine and selenoyeast, have higher bioavailability than an inorganic selenium source, sodium selenite, in diets for channel catfish (*Ictalurus punctatus*), 152 (1997) 223

Selenoyeast

Organic selenium sources, selenomethionine and selenoyeast, have higher bioavailability than an inorganic selenium source, sodium selenite, in diets for channel catfish (*Ictalurus punctatus*), 152 (1997) 223

Semi-intensive aquaculture

Feed preparation and feed management strategies within semi-intensive fish farming systems in the tropics, 151 (1997) 379

Semi-intensive culture

Low-cost feed for *Penaeus monodon* reared in tanks and under semi-intensive and intensive conditions in brackishwater ponds, 154 (1997) 69

Sensory analyses

Quality parameters of the flesh of Atlantic salmon (*Salmo salar*) as affected by dietary fat content and full-fat soybean meal as a partial substitute for fish meal in the diet, 157 (1997) 297

Seriola quinqueradiata

Pharmacokinetics and metabolism of sulphamonomethoxine in rainbow trout (*Oncorhynchus mykiss*) and yellowtail (*Seriola quinqueradiata*) following bolus intravascular administration, 153 (1997) 1

Serum

Influence of dietary protein content on the distribution of amino acids in oocytes, serum and muscle of Nile tilapia, *Oreochromis niloticus* (L.), 152 (1997) 205

Settlement

Spat settlement of the giant scallop, *Placopecten magellanicus* (Gmelin, 1791), and other bivalve species on artificial filamentous collectors coated with chitinous material, 148 (1997) 277

Survival and growth rates of post-larval abalone *Haliotis discus hannai* fed conspecific trail mucus and/or benthic diatom *Cocconeis scutellum* var. *parva*, 152 (1997) 129

Sex control

Optimal conditions for the induction of triploidy in the sea bass (*Dicentrarchus labrax* L.), 152 (1997) 287

Sex differentiation

Sex differentiation, changes in length, weight and eye size before and after metamorphosis of European eel (*Anguilla anguilla* L.) maintained in captivity, 153 (1997) 151

Sex inversion

Domestication of the white grouper, *Epinephelus aeneus*. 1. Growth and reproduction, 156 (1997) 305

Sex ratios

Gonadal differentiation, intersexuality and sex ratios of European eel (*Anguilla anguilla* L.) maintained in captivity, 153 (1997) 135

Sex reversal

Sex reversal in black crappie *Pomoxis nigromaculatus*: effect of oral administration of 17 α -methyltestosterone on two age classes, 158 (1997) 155

Sex steroids

Hormonal changes in male white bass (*Morone chrysops*) and evaluation of milt quality after treatment with a sustained-release GnRH α delivery system, 153 (1997) 301

Sexual growth dimorphism

Influence of feeding level on growth, intraspecific weight variability and sexual growth dimorphism of Eurasian perch *Perca fluviatilis* L. reared in a recirculation system, 157 (1997) 1

Shrimp

Application of the microsatellite technique for analyzing genetic diversity in shrimp breeding programs, 152 (1997) 35

Effect of dietary phospholipid on requirements for and incorporation of $n-3$ highly unsaturated fatty acids in postlarval *Penaeus japonicus* Bate, 158 (1997) 305

Effects of enzyme addition to canola meal in prawn diets, 151 (1997) 29

Histopathological and bacteriological study of white spot syndrome of *Penaeus monodon* along the west coast of India, 153 (1997) 9

Optimization of dietary vitamin C in fish and crustacean larvae: a review, 155 (1997) 165

Residues of oxytetracycline in cultured juvenile blue shrimp, *Penaeus stylirostris* (Crustacea: Decapod), fed medicated feed for 14 days, 149 (1997) 193

The effects of salinity and temperature on the growth and survival rates of juvenile white shrimp, *Penaeus vannamei*, Boone, 1931, 157 (1997) 107

pH-stat method to predict protein digestibility in white shrimp (*Penaeus vannamei*), 157 (1997) 251

Shrimp culture

Effect of stocking densities on trace metal concentration in three tissues of the brown shrimp *Penaeus californiensis*, 156 (1997) 21

Shrimp feeds

Changes in shrimp feed quality and effects on growth and survival of *Penaeus monodon* juveniles, 151 (1997) 121

Shrimp nutrition

Growth and fatty acid composition of juvenile leader prawns, *Penaeus monodon*, fed different lipids, 151 (1997) 131

Growth response and fatty acid composition of juvenile *Penaeus vannamei* fed different sources of dietary lipid, 151 (1997) 143

Threonine requirement of juvenile marine shrimp *Penaeus monodon*, 151 (1997) 9

Side-effects

Post-vaccination intra-abdominal adhesions as a marker to identify Atlantic salmon, *Salmo salar* L., escaped from commercial fish farms, 154 (1997) 27

Siderophore

Early weaning of seabass larvae, *Dicentrarchus labrax*: the effect on microbiota, with particular attention to iron supply and exoenzymes, 158 (1997) 117

***Siganus* sp.**

Nutrient requirements of marine food fish cultured in Southeast Asia, 151 (1997) 283

Signal crayfish

Signal crayfish, *Pacifastacus leniusculus*, as a vector for *Psorospermium haeckeli* to noble crayfish, *Astacus astacus*, 148 (1996) 1

Silage

The use of silages prepared from fish neural tissues as enrichers for rotifers (*Brachionus plicatilis*) and *Artemia* in the nutrition of larval marine fish, 148 (1997) 213

Sludge

An empirical model for predicting degradation of organic solids in fish culture systems based on short-term observations, 154 (1997) 173

Smoltification

Impact of a controlled release formulation of recombinant bovine growth hormone upon growth and seawater adaptation in coho (*Oncorhynchus kisutch*) and chinook (*Oncorhynchus tshawytscha*) salmon, 156 (1997) 113

Susceptibility to furunculosis, cold water vibriosis, and infectious pancreatic necrosis (IPN) in post-smolt Atlantic salmon (*Salmo salar* L.) as a function of smolt status by seawater transfer, 158 (1997) 179

Snakehead

Interactions of dietary levels of protein and energy on fingerling snakehead, *Channa striata*, 156 (1997) 241

Sodium selenite

Organic selenium sources, selenomethionine and selenoyeast, have higher bioavailability than an inorganic selenium source, sodium selenite, in diets for channel catfish (*Ictalurus punctatus*), 152 (1997) 223

Sole

A re-appraisal of the potential of the sole, *Solea solea* (L.), for commercial cultivation, 155 (1997) 355

Solids removal

Ozonation of a recirculating rainbow trout culture system. II. Effects on microscreen filtration and water quality, 158 (1997) 57

Somatotropin

Effects of growth hormone treatment on oxygen consumption and sea water adaptability in Atlantic salmon parr and pre-smolts, 148 (1996) 49

Soybean herbicides

Evaluation of effects of common aerially-applied soybean herbicides and propanil on the plankton communities of aquaculture ponds, 157 (1997) 117

Soybean meal

Adaptation to soybean meal in diets for rainbow trout, *Oncorhynchus mykiss*, 153 (1997) 263

Identification of feed enhancers for juvenile largemouth bass *Micropterus salmoides*, 148 (1997) 191

Soybean oil

The effects of experimental starter diets with different levels of soybean or menhaden oil on red drum (*Sciaenops ocellatus*), 149 (1997) 323

Soy protein concentrate

Nutritional value of soy protein concentrate for larvae of common carp (*Cyprinus carpio*) based on growth performance and digestive enzyme activities, 153 (1997) 63

Sparus aurata

A continuous cell line from the cultured marine fish gilt-head seabream (*Sparus aurata* L.), 150 (1997) 143

Detecting growth in gilthead seabream, *Sparus aurata* L., larvae fed microcapsules, 153 (1997) 93

Dominant intestinal microflora of sea bream and sea bass larvae, from two hatcheries, during larval development, 155 (1997) 387

Effect of feeding frequency, feeding level and temperature on energy metabolism in *Sparus aurata*, 148 (1997) 125

Induction of spawning in gilthead seabream, *Sparus aurata* L., by a long-acting GnRH agonist and its effects on egg quality and daily timing of spawning, 154 (1997) 349

Influence of eicosapentaenoic to docosahexaenoic acid ratio (EPA/DHA) of dietary lipids on growth and fatty acid composition of gilt-head seabream (*Sparus aurata*) juveniles, 150 (1997) 91

Management of size variation in juvenile gilt-head sea bream (*Sparus aurata*). I: Particle size and frequency of feeding dry and live food, 152 (1997) 181

Normal and abnormal osteological development of caudal fin in *Sparus aurata* L. fry, 149 (1997) 215

Pathological findings owing to the lack of ascorbic acid in cultured gilthead bream (*Sparus aurata* L.), 151 (1997) 209

The opercular complex deformity in intensive gilthead sea bream (*Sparus aurata* L.) larviculture. Moment of apparition and description, 156 (1997) 165

Spawning

LHRHa and pimozone-induced spawning of Asian catfish *Clarias macrocephalus* (Gunther) at different times during an annual reproductive cycle, 148 (1997) 323

Reproduction and molt in previously spawned and first-time spawning red-claw crayfish *Cherax quadricarinatus* females following eye-stalk ablation during the winter reproductive-arrest period, 156 (1997) 101

Seasonal and age variability in the reproductive performance of *Penaeus semisulcatus* broodstock: optimising broodstock selection, 155 (1997) 55

Spawning and larval husbandry of flounder (*Paralichthys woolmani*) and Pacific yellowtail (*Seriola mazatlanensis*), new candidate species for aquaculture, 155 (1997) 307

Spawning induction

Domestication of the white grouper, *Epinephelus aeneus*. 1. Growth and reproduction, 156 (1997) 305

Spermatogenesis

Relationship between serum levels of human chorionic gonadotropin (hCG) and 11-keto-testosterone after a single injection of hCG and induced maturity in the male Japanese eel, *Anguilla japonica*, 153 (1997) 123

Spermatozoa

Carp (*Cyprinus carpio* L.) spermatozoa cryobanks — strategies in research and application, 155 (1997) 13

Spermiation

Hormonal changes in male white bass (*Morone chrysops*) and evaluation of milt quality after treatment with a sustained-release GnRH α delivery system, 153 (1997) 301

Sperm motility

Objective analysis of sperm motility in the lake sturgeon, *Acipenser fulvescens*: activation and inhibition conditions, 154 (1997) 337

Sperm quality

Hormonal changes in male white bass (*Morone chrysops*) and evaluation of milt quality after treatment with a sustained-release GnRH α delivery system, 153 (1997) 301

Spiny lobster

Application of ecosystem culture method for complete development of phyllosomas of spiny lobster, 155 (1997) 319

Spionid polychaetes

Spionid polychaete infestations of intertidal pacific oysters *Crassostrea gigas* (Thunberg), Mahurangi Harbour, northern New Zealand, 153 (1997) 191

Sponges

Influence of explant procedures and environmental factors on culture success of three sponges, 156 (1997) 251

Spongiococcum excentricum

Growth and fatty acid composition of Pacific oyster (*Crassostrea gigas*) spat fed a spray-dried freshwater microalga (*Spongiococcum excentricum*) and microencapsulated lipids, 154 (1997) 293

Spray-dried microalga

Growth and fatty acid composition of Pacific oyster (*Crassostrea gigas*) spat fed a spray-dried freshwater microalga (*Spongiococcum excentricum*) and microencapsulated lipids, 154 (1997) 293

Starch granules

Efficiency of utilization of some potato starch modifications by rainbow trout (*Oncorhynchus mykiss*), 152 (1997) 235

Starch modifications

Efficiency of utilization of some potato starch modifications by rainbow trout (*Oncorhynchus mykiss*), 152 (1997) 235

Starfish

Large-scale laboratory culture of the crown-of-thorns starfish *Acanthaster planci* (L.) (Echinodermata: Asteroidea), 157 (1997) 215

Starvation

Effect of starvation on some morphological and biochemical parameters in white sturgeon, *Acipenser transmontanus*, 151 (1997) 357

The stability of docosahexaenoic acid in two *Artemia* species following enrichment and subsequent starvation, 155 (1997) 135

Starved

Changes in the fatty acid profiles of hybrid red tilapia, *Oreochromis mossambicus* × *O. niloticus*, subjected to short-term starvation, and a comparison with changes in seawater raised fish, 153 (1997) 273

Steelhead trout

The effect of diet on dorsal fin erosion in steelhead trout (*Oncorhynchus mykiss*), 156 (1997) 229

Sterility

Optimal conditions for the induction of triploidy in the sea bass (*Dicentrarchus labrax* L.), 152 (1997) 287

Steroids

The effect of diet on dorsal fin erosion in steelhead trout (*Oncorhynchus mykiss*), 156 (1997) 229

Stocking

Comparison of the marine survival of Atlantic salmon, *Salmo salar* L. smolts vaccinated and nonvaccinated against vibriosis, 156 (1997) 349

Genetic variation within and among Danish brown trout (*Salmo trutta* L.) hatchery strains, assessed by PCR-RFLP analysis of mitochondrial DNA segments, 153 (1997) 15

Stocking density

Comparative study of continuous and static water renewal strategies in the larviculture of *Penaues paulensis* (Pérez Farfante, 1967) associated with high stocking densities and different water renewal rates, 154 (1997) 247

Effects of diets and feeding rate on the survival and growth of Macquarie perch (*Macquaria australasica*) larvae, a threatened Australian native fish, 157 (1997) 35

Effects of stocking density on growth and survival of early juvenile silver-lip pearl oysters,

Pinctada maxima (Jameson), held in suspended nursery culture, 153 (1997) 41

The effect of stocking density on yield, growth and mortality of African catfish (*Clarias gariepinus* Burchell 1822) cultured in cages, 152 (1997) 67

Storage

Diet and feeding regimens for larval doughboy scallops, *Mimachlamys asperima*, 158 (1997) 289

Strain evaluation

Genotype and environment: A comparative evaluation of four tilapia stocks in Fiji, 150 (1997) 11

Streptococcus

Epizootiological aspects of *Streptococcus iniae* affecting tilapia in Texas, 152 (1997) 25

Stress

Effects of docosahexaenoic acid and phospholipids on stress tolerance of fish, 155 (1997) 129

Handling stress and water quality during live transportation and slaughter of Atlantic salmon (*Salmo salar*), 149 (1997) 243

Non-specific immune responses in the red porgy *Pagrus pagrus* after crowding stress, 156 (1997) 279

Prevention of stress in rainbow trout (*Oncorhynchus mykiss*) fed diets containing different doses of glucan, 154 (1997) 1

Stress induced elevation of plasma cortisol in adult female coho salmon (*Oncorhynchus kisutch*), is reflected in egg cortisol content, but does not appear to affect early development, 158 (1997) 141

Strombus gigas

Hydrogen peroxide induced metamorphosis of queen conch, *Strombus gigas*: Tests at the commercial scale, 148 (1997) 247

Sturgeon

Effect of starvation on some morphological and biochemical parameters in white sturgeon, *Acipenser transmontanus*, 151 (1997) 357

Objective analysis of sperm motility in the lake sturgeon, *Acipenser fulvescens*: activation and inhibition conditions, 154 (1997) 337

Spontaneous steatitis of epicardial fat in farmed white sturgeon (*Acipenser transmontanus*), 158 (1997) 167

Subadult

Salmonella spp. in free-ranging and farmed alligators (*Alligator mississippiensis*) from Texas and Louisiana, U.S.A., 156 (1997) 179

Substrate

Use of artificial grazing substrates in bullfrog tadpole culture, 152 (1997) 91

Sulphamonomethoxine

Pharmacokinetics and metabolism of sulphamonomethoxine in rainbow trout (*Oncorhynchus mykiss*) and yellowtail (*Seriola quinqueradiata*) following bolus intravascular administration, 153 (1997) 1

Survival

Effects of dietary astaxanthin supplementation on fertilization and egg survival in Atlantic salmon (*Salmo salar* L.), 153 (1997) 51

Effects of diets and feeding rate on the survival and growth of Macquarie perch (*Macquaria australasica*) larvae, a threatened Australian native fish, 157 (1997) 35

Effects of stocking density on growth and survival of early juvenile silver-lip pearl oysters, *Pinctada maxima* (Jameson), held in suspended nursery culture, 153 (1997) 41

Larval behaviour and effect of the timing of initial feeding on growth and survival of Siberian sturgeon (*Acipenser baeri*) larvae under small scale hatchery production, 156 (1997) 63

Larval rearing of the grouper *Epinephelus suillus* under laboratory conditions, 150 (1997) 63

Ration and spatial distribution of feed affect survival, growth, and competition in juvenile red-claw crayfish, *Cherax quadricarinatus*, reared in the laboratory, 148 (1997) 169

Survival and growth of juvenile fluted giant clams, *Tridacna squamosa*, in large-scale grow-out trials in the Solomon Islands, 148 (1997) 85

Suspension culture

Suspension culture of catarina scallop *Argopecten ventricosus* (= *circularis*) (Sowerby II, 1842), in Bahia Magdalena, Mexico, at different densities, 158 (1997) 235

Swimming

Priorities during early growth of fish larvae, 155 (1997) 249

Symmorphosis

Priorities during early growth of fish larvae, 155 (1997) 249

Tadpole

Use of artificial grazing substrates in bullfrog tadpole culture, 152 (1997) 91

Tagging

Vaccination improves survival of Baltic salmon (*Salmo salar*) smolts in delayed release sea ranching (net-pen period), 156 (1997) 335

Tawes

Rice-fish culture: feeding, growth and yield of two size classes of *Puntius gonionotus* Bleeker and *Oreochromis* spp. in Bangladesh, 154 (1997) 261

Tea seed cake

Toxicity of the Thai piscicidal plant, *Maesa ramentacea*, to freshwater fishes in ponds, 158 (1997) 229

Techniques—culture methods

Effects of initial weight and genetic strain on feed training largemouth bass *Micropterus salmoides* using ground fish flesh and freeze dried krill as starter diets, 148 (1997) 179

Techniques, culture methods

The use of freeze-dried krill to feed train largemouth bass (*Micropterus salmoides*): feeds and training strategies, 148 (1997) 299

Techniques—feeding and nutrition

Effects of initial weight and genetic strain on feed training largemouth bass *Micropterus salmoides* using ground fish flesh and freeze dried krill as starter diets, 148 (1997) 179

Techniques, feeding and nutrition

The use of freeze-dried krill to feed train large-mouth bass (*Micropterus salmoides*): feeds and training strategies, 148 (1997) 299

Teleost

Optimal conditions for the induction of triploidy in the sea bass (*Dicentrarchus labrax* L.), 152 (1997) 287

Teleost sperm banks

Carp (*Cyprinus carpio* L.) spermatozoa cryobanks — strategies in research and application, 155 (1997) 13

Temperature

Effect of feeding frequency, feeding level and temperature on energy metabolism in *Sparus aurata*, 148 (1997) 125

Effect of temperature on growth, feed consumption and nutritional indices of *Haliotis midae* fed a formulated diet, 152 (1997) 191

Effects of temperature on yolk sac larvae of Atlantic halibut (*Hippoglossus hippoglossus* L.), 157 (1997) 123

The effects of salinity and temperature on the growth and survival rates of juvenile white shrimp, *Penaeus vannamei*, Boone, 1931, 157 (1997) 107

Testis somatic index

Genetic analysis of testis development in all-male F1 hybrid strains of common carp, *Cyprinus carpio*, 158 (1997) 33

Tetraselmis gracilis

Changes in biochemical profile of *Tetraselmis gracilis* I. Comparison of two culture media, 148 (1997) 153

Threonine requirement

Threonine requirement of juvenile marine shrimp *Penaeus monodon*, 151 (1997) 9

Tilapia

Cowpea (*Vigna unguiculata*) protein concentrate as replacement for fish meal in diets for tilapia (*Oreochromis niloticus*) fry, 158 (1997) 107

Epizootiological aspects of *Streptococcus iniae* affecting tilapia in Texas, 152 (1997) 25

Genotype and environment: A comparative evaluation of four tilapia stocks in Fiji, 150 (1997) 11

Influence of dietary protein content on the distribution of amino acids in oocytes, serum and muscle of Nile tilapia, *Oreochromis niloticus* (L.), 152 (1997) 205

Influence of dietary protein level on ovarian recrudescence in Nile tilapia, *Oreochromis niloticus* (L.), 149 (1997) 57

Rice-fish culture: feeding, growth and yield of two size classes of *Puntius gonionotus* Bleeker and *Oreochromis* spp. in Bangladesh, 154 (1997) 261

Utilization of carbohydrates in warmwater fish —with particular reference to tilapia, *Oreochromis niloticus* × *O. aureus*, 151 (1997) 79

Time

Apparent digestibility of tuna oil for common carp, *Cyprinus carpio* — effect of inclusion level and adaptation time, 148 (1997) 143

Tissues

Tissue distribution and depletion of flumequine after in-feed administration in sea bream (*Sparus aurata*), 157 (1997) 197

Toxicity

Environmental risk from dissolved ivermectin to marine organisms, 158 (1997) 263

Toxicity persistence

Toxicity of the Thai piscicidal plant, *Maesa ramentacea*, to freshwater fishes in ponds, 158 (1997) 229

Toxicity test

Toxicity of the Thai piscicidal plant, *Maesa ramentacea*, to freshwater fishes in ponds, 158 (1997) 229

Trail mucus

Survival and growth rates of post-larval abalone *Haliotis discus hannai* fed conspecific trail mucus and/or benthic diatom *Cocconeis scutellum* var. *parva*, 152 (1997) 129

Transportation

Handling stress and water quality during live transportation and slaughter of Atlantic salmon (*Salmo salar*), 149 (1997) 243

Treatment

A biomechanical filter for treating fish-pond effluents, 152 (1997) 103

Tridacna squamosa

Survival and growth of juvenile fluted giant clams, *Tridacna squamosa*, in large-scale grow-out trials in the Solomon Islands, 148 (1997) 85

Triploidy

Optimal conditions for the induction of triploidy in the sea bass (*Dicentrarchus labrax* L.), 152 (1997) 287

Trophic condition

Effects of trophic and environmental conditions on the growth of *Crassostrea gigas* in culture, 153 (1997) 81

Tropics

Feed preparation and feed management strategies within semi-intensive fish farming systems in the tropics, 151 (1997) 379

Trout

Assessment of genetic variability among strains of rainbow and cutthroat trout using multilocus DNA fingerprints, 149 (1997) 47

Depletion study of fenbendazole in rainbow trout (*Oncorhynchus mykiss*) after oral and bath treatment, 154 (1997) 191

Trout recirculating system

Ozonation of a recirculating rainbow trout culture system. I. Effects on bacterial gill disease and heterotrophic bacteria, 158 (1997) 43

Trypsin

Nutritional value of soy protein concentrate for larvae of common carp (*Cyprinus carpio*) based on growth performance and digestive enzyme activities, 153 (1997) 63

Protein-hydrolyzing enzymes in the digestive systems of the adult Mexican blue abalone, *Haliotis fulgens* (Gastropoda), 157 (1997) 325

Trypsin inhibitor

Nutritional value of soy protein concentrate for larvae of common carp (*Cyprinus carpio*) based on growth performance and digestive enzyme activities, 153 (1997) 63

Tryptophan

Niacin requirement and inability of tryptophan to act as a precursor of NAD⁺ in channel catfish, *Ictalurus punctatus*, 152 (1997) 273

Turbot

Chronic ammonia toxicity in juvenile turbot (*Scophthalmus maximus*), 154 (1997) 155

Growth of clam seed (*Ruditapes decussatus*) reared in the wastewater effluent from a fish farm in Galicia (N.W. Spain), 158 (1997) 247

Lipid digestion in turbot (*Scophthalmus maximus*): in-vivo and in-vitro studies of the lipolytic activity in various segments of the digestive tract, 151 (1997) 155

Turbot larvae

Production and use of copepods in marine fish larviculture, 155 (1997) 231

Underwater cleaning

Biofouling of fish-cage netting: efficacy and problems of in situ cleaning, 152 (1997) 77

Unfed ponds

Relative prawn production and benthic macroinvertebrate densities in unfed, organically fertilized, and fed pond systems, 149 (1997) 227

Unsaturated fatty acids

Nutritional values of chironomid larvae grown in palm oil mill effluent and algal culture, 158 (1997) 95

Vaccination

Comparison of the marine survival of Atlantic salmon, *Salmo salar* L. smolts vaccinated and nonvaccinated against vibriosis, 156 (1997) 349

Post-vaccination intra-abdominal adhesions as a marker to identify Atlantic salmon, *Salmo salar* L., escaped from commercial fish farms, 154 (1997) 27

Vaccination improves survival of Baltic salmon (*Salmo salar*) smolts in delayed release sea ranching (net-pen period), 156 (1997) 335

Viability

Blastomere morphology as a predictive measure of fish egg viability, 155 (1997) 1

Vibrio

Early weaning of seabass larvae, *Dicentrarchus labrax*: the effect on microbiota, with particular attention to iron supply and exoenzymes, 158 (1997) 117

Vibrio anguillarum

Dominant intestinal microflora of sea bream and sea bass larvae, from two hatcheries, during larval development, 155 (1997) 387

Genetic correlations between survival of Atlantic salmon in challenge and field tests, 158 (1997) 277

Vibriosis

Vibrios associated with routine productions of *Brachionus plicatilis*, 149 (1997) 203

Vibrio salmonicida

Genetic correlations between survival of Atlantic salmon in challenge and field tests, 158 (1997) 277

Susceptibility to furunculosis, cold water vibriosis, and infectious pancreatic necrosis (IPN) in post-smolt Atlantic salmon (*Salmo salar* L.) as a function of smolt status by seawater transfer, 158 (1997) 179

Vibriosis

Comparison of the marine survival of Atlantic salmon, *Salmo salar* L. smolts vaccinated and nonvaccinated against vibriosis, 156 (1997) 349

Vibrio spp.

Isolation of *Vibrio* spp. from *Penaeus monodon* (Fabricius) with red disease syndrome, 154 (1997) 107

Vigna

Cowpea (*Vigna unguiculata*) protein concentrate as replacement for fish meal in diets for tilapia (*Oreochromis niloticus*) fry, 158 (1997) 107

Virus-free crayfish

Age at first infection of *Cherax quadricarinatus* by *Cherax quadricarinatus* bacilliform virus and *Cherax* *Giardiavirus*-like virus, and pro-

duction of putative virus-free crayfish, 152 (1997) 1

Vitamin B₆

Effects of dietary pyridoxine and protein levels on growth, vitamin B₆ content, and free amino acid profile of juvenile *Penaeus japonicus*, 157 (1997) 263

Vitamin B₆ in Atlantic halibut, *Hippoglossus hippoglossus*—endogenous utilization and retention in larvae fed natural zooplankton, 157 (1997) 337

Vitamin C

Different concentrations of ascorbyl-2-monophosphate-magnesium as dietary sources of vitamin C for seabass, *Lates calcarifer*, 151 (1997) 225

Nutritional properties of microalgae for mariculture, 151 (1997) 315

Optimization of dietary vitamin C in fish and crustacean larvae: a review, 155 (1997) 165

Stability and bioavailability of vitamin C-glucose in *Clarias* hybrid catfish (*Clarias gariepinus* × *Clarias macrocephalus*), 151 (1997) 219

Vitamin C deficiency

Different concentrations of ascorbyl-2-monophosphate-magnesium as dietary sources of vitamin C for seabass, *Lates calcarifer*, 151 (1997) 225

Vitamine C deficiency

Pathological findings owing to the lack of ascorbic acid in cultured gilthead bream (*Sparus aurata* L.), 151 (1997) 209

Vitamin K

Effects of different levels of vitamin K in diets for cod (*Gadus morhua*), 151 (1997) 269

Vitellogenesis

A comparative study of the ovarian development in wild and pond-reared shrimp, *Penaeus kerathurus* (Forskål, 1775), 148 (1996) 63

Wastewater

Growth of clam seed (*Ruditapes decussatus*) reared in the wastewater effluent from a fish farm in Galicia (N.W. Spain), 158 (1997) 247

Water currents

Effect of water currents on the development of skeletal deformities in sea bass (*Dicentrarchus labrax* L.) with functional swimbladder during postlarval and nursery phase, 156 (1997) 145

Water quality

Evaluation of effects of common aerially-applied soybean herbicides and propanil on the plankton communities of aquaculture ponds, 157 (1997) 117

Handling stress and water quality during live transportation and slaughter of Atlantic salmon (*Salmo salar*), 149 (1997) 243

Ozonation of a recirculating rainbow trout culture system. II. Effects on microscreen filtration and water quality, 158 (1997) 57

Water renewal rate

Comparative study of continuous and static water renewal strategies in the larviculture of *Penaeus paulensis* (Pérez Farfante, 1967) associated with high stocking densities and different water renewal rates, 154 (1997) 247

Water renewal strategies

Comparative study of continuous and static water renewal strategies in the larviculture of *Penaeus paulensis* (Pérez Farfante, 1967) associated with high stocking densities and different water renewal rates, 154 (1997) 247

Wax esters

Effects of broodstock dietary lipid on fatty acid compositions of eggs from sea bass (*Dicentrarchus labrax*), 149 (1997) 107

Weaning

A re-appraisal of the potential of the sole, *Solea solea* (L.), for commercial cultivation, 155 (1997) 355

Co-feeding marine fish larvae with inert and live diets, 155 (1997) 183

Effects of diets and feeding rate on the survival and growth of Macquarie perch (*Macquaria australasica*) larvae, a threatened Australian native fish, 157 (1997) 35

White bass

Hormonal changes in male white bass (*Morone chrysops*) and evaluation of milt quality after treatment with a sustained-release GnRHa delivery system, 153 (1997) 301

Whitefish

Influence of the length of the daily feeding period on feed intake and growth of whitefish, *Coregonus lavaretus*, 156 (1997) 35

White spot syndrome

Histopathological and bacteriological study of white spot syndrome of *Penaeus monodon* along the west coast of India, 153 (1997) 9

Window-pane shell (*Placuna placenta* Linnaeus, 1758)

Notes on the induced spawning, embryonic and larval development of the window-pane shell, *Placuna placenta* (Linnaeus, 1758), in the laboratory, 157 (1997) 137

Winter disease

Winter disease outbreak in sea-bream (*Sparus aurata*) associated with *Pseudomonas anguilliseptica* infection, 156 (1997) 317

Yabby

Influence of differential movement of the marker chromic oxide and nutrients on digestibility estimations in the Australian freshwater crayfish *Cherax destructor*, 154 (1997) 323

Yellowtail

Quantitative lysine requirement of yellowtail (*Seriola quinqueradiata*), 158 (1997) 331

Quantitative methionine requirement of yellowtail (*Seriola quinqueradiata*), 150 (1997) 113

Spawning and larval husbandry of flounder (*Paralichthys woolmani*) and Pacific yellowtail (*Seriola mazatlanensis*), new candidate species for aquaculture, 155 (1997) 307

The efficacy of lipopolysaccharide mixed chloroform-killed cell (LPS-CKC) bacterin of *Pasteurella piscicida* on Yellowtail, *Seriola quinqueradiata*, 154 (1997) 95

Yield

Rice-fish culture: feeding, growth and yield of two size classes of *Puntius gonionotus* Bleeker

and *Oreochromis* spp. in Bangladesh, 154
(1997) 261

Yolk sac

Effects of salinity on yolk sac larvae of Atlantic halibut (*Hippoglossus hippoglossus* L.), 156
(1997) 291

Effects of temperature on yolk sac larvae of Atlantic halibut (*Hippoglossus hippoglossus* L.), 157 (1997) 123

Yolk-sac

Vitamin B₆ in Atlantic halibut, *Hippoglossus hippoglossus*—endogenous utilization and retention in larvae fed natural zooplankton, 157
(1997) 337

Zinc

Effect of stocking densities on trace metal concentration in three tissues of the brown shrimp *Penaeus californiensis*, 156 (1997) 21

Trace minerals in fish nutrition, 151 (1997) 185

Zooplankton

The potential of certain indigenous copepod species as live food for commercial fish larval rearing, 151 (1997) 351

Zooplankton culture

Effect of manuring rate on in situ production of zooplankton *Daphnia carinata*, 156 (1997) 85

Contents (continued)

Growth of clam seed (<i>Ruditapes decussatus</i>) reared in the wastewater effluent from a fish farm in Galicia (N.W. Spain) R. Jara-Jara, A.J. Pazos, M. Abad, L.O. García-Martín and J.L. Sánchez (Santiago de Compostela, Spain)	247
Environmental risk from dissolved ivermectin to marine organisms I.M. Davies (Aberdeen, UK), J.G. McHenry (Edinburgh, UK) and G.H. Rae (Perth, UK) . . .	263
Genetics and Breeding	
Genetic correlations between survival of Atlantic salmon in challenge and field tests H.M. GjØen, T. Refstie, O. Ulla and B. Gjerde (Aas, Norway)	277
Nutrition	
Diet and feeding regimens for larval doughboy scallops, <i>Mimachlamys asperima</i> W.A. O'Connor (Taylors Beach, NSW, Gore Hill, NSW, Australia) and M.P. Heasman (Taylors Beach, NSW, Australia)	289
Effect of dietary phospholipid on requirements for and incorporation of <i>n</i> - 3 highly unsaturated fatty acids in postlarval <i>Penaeus japonicus</i> Bate E.K.M. Kontara, P. Coutteau and P. Sorgeloos (Ghent, Belgium)	305
Growth response of juvenile <i>Barbodes altus</i> fed isocaloric diets with variable protein levels A. Elangovan and K.F. Shim (Singapore, Singapore)	321
Quantitative lysine requirement of yellowtail (<i>Seriola quinqueradiata</i>) T. Ruchimat, T. Masumoto, H. Hosokawa, Y. Itoh and S. Shimeno (Kochi, Japan)	331
Book reviews	
Baseline studies of Biodiversity: The Fish Resources of Western Indonesia	341
Status and Technology of Indian Major Carp Farming in Andhra Pradesh, India	342
Identification of Freshwater Diatoms from Live Material	343
Books received	345
Volume contents	347
Author Index	351
Subject Index	381